

APPENDIX 1.

Synonym list for muscular units. For abbreviations see Appendix 4. "Partim" added by IW. Asterisks used as in Figures 6–15. Functions as referred in the literature or hypothesised based on the orientation of the muscular structure and surrounding tissues (available online).

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 1 | m. obliquus inferior | m. oblife | III |
| origin | anteriodorsal corner of optic cavity, partly on septum interorbitalis, ventral to obliquus superior (No. 9) | | |
| insertion | ventrally at eye bulbus | | |
| function | movement of the eye bulbus (rotation to anterodorsal direction) | | |
| synonyms | <i>inferior oblique</i> (Underwood 1970), <i>obliquus inferior</i> (Filatoff 1907, Johnson 1913, Ogushi 1913b: No.7, Hoffmann 1890: No. 6, Shiino 1913, Thomson 1932, Nishi 1938b, Schumacher 1972, Kuratani 1989), <i>obliquus oculi inferior</i> (Bojanus 1819-21: No. 10, Stannius 1854, Owen 1866), <i>ventral oblique</i> (Brudenall et al. 2008) | | |
| 2 | m. rectus anterior | m. recant | III |
| origin | by 1-2 heads anteriorly from foramen opticum | | |
| insertion | by 1-2 heads anteromedial face of eye bulbus, the possible second head into lower eyelid or membrana nictitans | | |
| function | movement of the eye bulbus (rotation to anteromedial direction) | | |
| synonyms | <i>rectus anterior</i> (Underwood 1970), <i>internal rectus</i> (Martin and Moale 1881), <i>medial rectus</i> (Brudenall et al. 2008), <i>rectus anterior</i> (Eger 2006), <i>rectus interior</i> (Kuratani 1987), <i>rectus internus</i> (Hoffmann 1890: No. 2, Filatoff 1907, Thomson 1932), <i>rectus internus oculi</i> (Bojanus 1819-21: No. 7, Owen 1849, Stannius 1854), <i>rectus nasalis</i> (Nishi 1938b), <i>rectus medialis</i> (Johnson 1913, Ogushi 1913b: No. 4, Shiino 1913, Schumacher 1972) | | |
| 3 | m. rectus inferior | m. recife | III |
| origin | ventrally to foramen opticum | | |
| insertion | ventrally at eye bulbus | | |
| function | movement of the eye bulbus (rotation to posterodorsal direction) | | |
| synonyms | <i>inferior rectus</i> (Martin and Moale 1881, Underwood 1970), <i>rectus inferior</i> (Filatoff 1907, Ogushi 1913b: No. 2, Johnson 1913, Shiino 1913, Thomson 1932, Nishi 1938b, Schumacher 1972, Kuratani 1987), <i>rectus oculi inferior</i> (Bojanus 1819-21: No. 6, Owen 1849, Stannius 1854, Hoffmann 1890: No. 4), <i>ventral rectus</i> (Brudenall et al. 2008) | | |
| 4 | m. rectus superior | m. recsup | III |
| origin | dorsally to foramen opticum | | |
| insertion | dorsally at eye bulbus | | |
| function | movement of the eye bulbus (rotation to dorsomedial direction) | | |
| synonyms | <i>dorsal rectus</i> (Brudenall et al. 2008), <i>rectus oculi superior</i> (Bojanus 1819-21: No. 5, Owen, 1849, Stannius 1854, Hoffmann 1890: No. 3), <i>rectus superior</i> (Filatoff 1907, Johnson 1913, Thomson 1932, Ogushi 1913b: No. 1, Shiino 1913, Nishi 1938b, Schumacher 1972, Kuratani 1989), <i>superior rectus</i> (Martin and Moale 1881, Underwood 1970) | | |
| 5 | m. ciliaris | m. cil | III |
| origin | ciliar connective tissue or basal membrane of epithelium | | |
| insertion | at medial most scleral lamellae, ring shaped as a whole, most fibres are radial | | |
| function | ciliar body pulled to outside (König 1934/35), accomodation | | |
| synonyms | <i>ciliary body musculature</i> (Brudenall et al. 2008), <i>ciliary muscle</i> (Thomson 1932: with meridonal and circular fibres), Crampton's muscle (Underwood 1970: Cm), <i>medionale + zirkuläre Zilliarmuskulatur</i> (König 1934/35: M.m.+M.z. or Z.-M., Franz 1934: cm) | | |
| 6* | m. dilatator pupillae | m. dilpup | III |
| origin | inner third of the iris (Brudenall et al. 2008) | | |
| insertion | to the iris root, adjacent to the posterior iris epithelium (Brudenall et al. 2008) | | |
| function | accomodation | | |
| synonyms | <i>dilator muscle</i> (Brudenall et al. 2008) | | |
| comments | only described for <i>Dermodochelys coriacea</i> (Brudenall et al. 2008) | | |

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| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 7 | m. sphincter pupillae | m. stepup | III |
| origin | ring shaped, peripherally from the pupil margin (Brudenall et al. 2008) | | |
| insertion | | | |
| function | constriction of pupil by circular fibres, widening of pupil by the few radial fibres (König 1934/35), accomodation | | |
| synonyms | <i>iris sphincter</i> (Brudenall et al. 2008), <i>muscles of the iris</i> (Thomson 1932), <i>sphincter muscle + dilatator fibres</i> (Underwood 1970: df), <i>zirkuläre + radiäre Irismuskulatur</i> (König 1934/35: mz + mr I.-M.) | | |
| 8 | m. transversalis oculi | m. tveocu | III |
| origin | within the cleft formed by the rest of the embryonal ocular vesicle | | |
| insertion | indirect connection to lens by zonula fibres | | |
| function | small rostrad movement of the lens (König 1934/35) | | |
| synonyms | <i>bisher unbekannter Muskel im Reptilienauge</i> (Hess 1912: M), <i>lens or transversal muscle</i> (Thomson 1932), <i>transversalis</i> (Walls 1967, Underwood 1970, Brudenall et al. 2008), <i>Transversalmuskel</i> (König 1934/35: T.-M., Franz 1934: TM) | | |
| 9 | m. obliquus superior (principalis) | m. oblsio(pri) | IV |
| origin | anterodorsal corner of optic cavity, partly on septum interorbitalis, from the border of frontal/nasal, dorsally to obliquus inferior | | |
| insertion | dorsally on eye bulbus | | |
| function | movement of the eye bulbus (rotation to anteroventral direction) | | |
| synonyms | <i>dorsal oblique</i> (Brudenall et al. 2008), <i>obliquus superior</i> (Hoffmann 1890: No. 5, Johnson 1913, Shiino 1913, Nishi 1938b, Schumacher 1972, Kuratani 1987), <i>obliquus oculi superior</i> (Bojanus 1819-21: No. 9, Stannius 1854, Owen 1866), <i>obliquus superior proprius</i> (Ogushi 1913b: No. 5), <i>superior oblique</i> (Martin and Moale 1881, Thomson 1932, Underwood 1970) | | |
| 10* | m. obliquus superior accessorius | m. oblsioacc | IV |
| origin | posterodorsal of m. obliquus superior (after Ogushi 1913b: TextFig. 7) | | |
| insertion | posterior curvature of eye bulbus, mostly covered by accessory head of m. retractor bulbi (Ogushi 1913b) | | |
| function | movement of the eye bulbus (rotation to posteromedial direction) | | |
| synonyms | <i>obliquus superior accessorius</i> (Ogushi 1913b: No. 6) | | |
| comments | only described for <i>Pelodiscus sinensis</i> (Ogushi 1913b) | | |
| 11 | m. nasalis Pars circumnarialis | nasCIRNAR | IV |
| origin | consists of radial fibres, from medial walls of paranasal cartilages or connective tissue (Winokur 1982) | | |
| insertion | lateral parts of the lamina propria mucosa, a few fibres connected to Pars arrector rostri in anterior regions of snouts where paranasal cartilages are absent (Winokur 1982) | | |
| function | nasal vestibula pulled laterally or dorsolaterally and thus also dilating the nasal openings (Winokur 1982) | | |
| synonyms | <i>circumnarial muscle</i> (Winokur 1982) | | |
| 12* | m. nasalis Pars internarialis | m. nasITENAR | V |
| origin | complex array of fibres forming a trabecular network, from medial sides of narial vestibulae (Winokur 1982) | | |
| insertion | to the midline of the internarial region or between to the medial vestibular wall of the contralateral body side (Winokur 1982) | | |
| function | at least transverse oriented fibres act as nasal dilator, pulling the medial walls of the nasal vestibula medially (Winokur 1982) | | |
| synonyms | <i>internarial muscle</i> (Winokur 1982) | | |
| comments | only described for <i>Podocnemis unifilis</i> (Winokur 1982) | | |
| 13 | m. nasalis Pars arrector rostri | m. nasARRROS | V |
| origin | ventrally at the anterior border of nasal and medially at maxilla (George & Shah 1955a) / by aponeurosis from apertura narium externa and parts of nasal capsule (Ogushi 1913b) / prefrontal bone and nasal cartilages (Winokur 1982) | | |
| insertion | skin bordering the nostrils (George and Shah 1955a) / nasal capsule (around fenestra superior) and neighbouring submucosa (Ogushi 1913b) / by flat tendon between mediql and lateral cartilagenous anterior extension of nasal capsule (Winokur 1982) | | |
| function | lifting the nose out of water for breathing (Ogushi 1913b), contraction acts as dilatator of external nares (George & Shah 1955a) / elevates anterior part of snout (Winokur 1982) | | |
| synonyms | <i>arrector rostri</i> (Ogushi 1913b: No. 12, Winnokur 1982), <i>tensor nasalis</i> (George and Shah 1955a) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|---------------------|---------------------|
| 14 | m. depressor palpebrae inferioris Pars transversalis | m. depppeifeTVE | V |
| origin | at ligamentum flavum (connection between periorbita and septum interorbitale) (Lakjer 1926), basisphenoid (?) (Hoffmann 1890) | | |
| insertion | periphery of lower eye lid (Lakjer 1926), sometimes upper eye lid (Hoffmann 1890) | | |
| function | lowers the lower eye lid (Ogushi 1913b, Lakjer 1926) | | |
| synonyms | <i>depressor palpebrae inferior</i> partim (Edgeworth 1935: smooth (unstriped) ocular muscle of Chelonia, Stannius 1854), <i>depressor palpebrae inferioris</i> partim (Ogushi 1913b: No. 11 frontale glatte Fasern), <i>depressor palpebrae inferioris et superioris</i> (Hoffmann 1890: No. 8: this is only one muscle, Thomson 1932), <i>glatte Lidmuskulatur Pars transversale</i> (Lakjer 1926: Trans.), <i>glatter Augenmuskel</i> partim (Poglayen-Neuwall 1953a), <i>glatte Muskeln der Periorbita</i> partim? (Burkard 1902: partim?: he only described equatorial fibres), <i>palpebralis</i> partim (Bojanus 1819-21: No. 12), <i>reichliche glatte Lidmuskulatur</i> partim (Lubosch 1933), <i>smooth (unstriped ocular muscle of Chelonia</i> partim (Edgeworth 1935), <i>transversale, ventrale Schicht glatter Musekelzellen</i> (Lubosch 1938) | | |
| comments | Tiedemann (1819): p. 355, „... beiden ?ehr beweglichen Augenlider einen gro?sen gemein?chaftlichen Muskel enthalten.“: indicates a relationship of m. pyramidalis, No. 34, with m. depressor palpebrae inferioris (No. 14-15); innervation: V ₂ (Ogushi 1913b, Lubosch 1933) | | |
| 15 | m. depressor palpebrae inferioris Pars equatorialis | m. depppeifeEQU | V |
| origin | prae frontal (anterior wall of orbita) (Lakjer 1926) | | |
| insertion | parietal (posterior wall of orbita) (Lakjer 1926) | | |
| function | lifts up the eye bulbus (Lakjer 1926), empties lacrimal gland (Burkard 1902:90) | | |
| synonyms | <i>depressor palpebrae inferioris</i> partim (Edgeworth 1935: smooth (unstriped) ocular muscle of Chelonia, Stannius 1854), <i>depressor palpebrae inferioris</i> partim (Ogushi 1913b: No. 11), <i>dorsale, longitudinale Schicht glatter Musekelzellen</i> (Lubosch 1938), <i>glatte Lidmuskulatur Pars äquatoriale</i> (Lakjer 1926: Long.), <i>glatter Augenmuskel</i> partim (Poglayen-Neuwall 1953a), <i>glatte Muskeln der Periorbita</i> partim (Burkard 1902: partim?: he only described equatorial fibres), <i>palpebralis</i> partim (Bojanus 1819-21: No. 12), <i>reichliche glatte Lidmuskulatur</i> partim (Lubosch 1933), <i>smooth (unstriped ocular muscle of Chelonia</i> partim (Edgeworth 1935) | | |
| comments | not in <i>Dermochelys</i> (who still has the m. levator bulbi) and <i>Pelodiscus</i> , but in <i>Terrapene carolina</i> (where no m. levator bulbi is visible) (Lakjer 1926) | | |
| 16* | m. levator bulbi | m. levbul | V |
| origin | ventral of the processus descendens parietalis, short before prootic, anterior cartilaginous border of brain case/septum interorbitale | | |
| insertion | <u>head 1 (ventral head)</u> : Pars palatina palatoquadrati (cartilages along a rim on the dorsal face of pterygoid); <u>head 2 (dorsal head)</u> : ventrally to periorbita | | |
| function | dorsal head without function (Lakjer 1926) / dorsal head lifting of the eye bulbus | | |
| synonyms | <i>adductor maxillae superioris</i> (Fischer 1852: Sauria), <i>levator bulbi</i> (Lakjer 1926, Lubosch 1933, 1938), <i>palpebralis</i> (Schumacher 1973: II-B1'''/), <i>depressor palpebrae</i> (Versluys 1912), <i>Depressor palpebrae inferioris</i> (Weber 1877: in Lacertidae, Edgeworth 1935: Sauropsida), <i>Schädelpterygoidmuskulatur</i> (Fuchs 1915) <u>anterior head only</u> : <i>m. levator bulbi Pars dorsalis (Levator bulbi dorsalis)</i> (Lakjer 1926), <u>posterior head only</u> : <i>m. levator bulbi Pars ventralis (Levator bulbi ventralis)</i> (Lakjer 1926) | | |
| comments | mostly or completely reduced in the adults of most species, described for <i>Dermochelys coriacea</i> (Lakjer 1926) | | |
| 17-21 | m. adductor mandibulae externus complex | - | V |
| synonyms | <u>adductor mandibulae externus (including all portions)</u> : <i>adductor mandibulae A2</i> (Diogo and Abdala 2010), <i>adductor mandibulae externus</i> (Lakjer 1926, Lubosch 1933, Edgeworth 1935, Poglayen-Neuwall 1953a, 1953/54, 1966, Kiliias 1957, Shah 1963, Schumacher 1972, 1973: II-B2b(i-iii), Barghusen 1973, Weisgram 1985, Lemmell and Weisgram 1997, Sato et al. 1997: MAME, Van Damme and Aerts 1997, Wochesländer et al. 1999, Lemell et al. 2000, Tvarožková 2006, Natchev and Weisgram 2007, Natchev et al. 2008), <i>adductor mandibularis externus</i> (Schumacher 1953/54, 1954/55a, b, 1956a, b, c), <i>adductor mandibulae externus medialis (II mit.)</i> (Lakjer 1926), <i>capiti-mandibularis</i> (Gregory and Adams 1915, Adams 1919), <i>external adductor</i> (Lemell et al. 2010: figure 4C), <i>Kaumuskulatur</i> (Fuchs 1915), <i>occipito-squamoso-maxillaris</i> partim (Hoffmann 1890: No. 9), <i>laterale Kaumuskulatur</i> (Fuschs 1931, 1933), <i>Schlaefenmuskel (temporalis)</i> (Wiedemann 1802: No. 1, p. 79), <i>temporal (muscle)</i> (Parker 1878-1879, Martina and Moale 1881, Ashley 1962, Arenciba et al. 2006), <i>temporalis</i> (Bojanus 1819-21: No. 1, Owen 1866, Stannius 1854, Edgeworth 1907: Temporal, Ogushi 1913b: No. 14, Shiino 1913, Fuchs 1915, Gregory and Adams 1915, Versluys 1919, Zdansky 1923-25, Thomson 1932: also occipito-squamoso-maxillary, Kiliias 1957: also <i>adductor mandibulae externus</i>), <i>occipito-squamoso-maxillary</i> (Thomson 1932: also <i>temporalis</i>) | | |

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| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|----------------------|---------------------|
| 17 | m. adductor mandibulae externus Pars medialis (principalis) | m. addmaneteMDI(PRI) | V |
| origin | anterior face of quadrate (Lakjer 1926) | | |
| insertion | lateral face of coronar aponeurosis coronoid, dentary, articular and dorsally to surangular (Schumacher 1973, Iordansky 1987) | | |
| function | adduction of lower jaw (caudad) | | |
| synonyms | <i>adductor mandibulae A2 medialis</i> (Diogo and Abdala 2010), <i>adductor mandibulae (quadrate part)</i> (Wyneken 2003), <i>adductor mandibulae externus Pars/Portio media</i> [Poglayen-Neuwall 1953, 1966 (exceptions for some species such as <i>Chelus fimbriatus</i> or <i>Mesoclemmys nasuta</i> : Pars medialis and the squamosal-related head of Pars superficialis are fused and the "Pars superficialis" of the author represents the postorbital region related head of Pars superficialis; see text for discussion), Schumacher 1972, 1973, Tvarožková 2006, Natchev and Weisgram 2007, Natchev et al. 2009, 2010], <i>adductor mandibulae externus medialis</i> (Lakjer 1926: II/II mit., Schumacher 1956a, c, Hacker 1954, Kiliass 1957, Dalrymple 1975, Lemell et al. 2010: possibly "Med" of figure 4D), <i>adductor mandibulae externus medius</i> (Lubosch 1933, 1938), <i>adductor mandibulae externus med. part</i> (Wyneken 2003: figure 2.20), <i>adductor mandibulae externus inferior</i> (Iordansky 1996: maei/mali, 2010), <i>adductor mandibularis externus medialis</i> (Schumacher 1953/54, 1954/55a, b, 1956a, c) | | |
| comments | fused with the squamosal head of the Pars superficialis (No. 21) in some species, see comments there | | |
| 18* | m. adductor mandibulae externus Pars medialis inferior | m. addmaneteMDIIFE | V |
| origin | anteroventral face of quadrate | | |
| insertion | dorsal edge of supraangular | | |
| function | adduction of lower jaw (caudad) | | |
| synonyms | <i>adductor mandibulae externus medialis (II vent.)</i> (Lakjer 1926) | | |
| comments | only described for <i>Amyda cartilaginea</i> (Lakjer 1926) | | |
| 19 | m. adductor mandibulae externus Pars profundus (principalis) | m. addmanetePFU(PRI) | V |
| origin | supraoccipital, parietal, occipital, opisthotic, prootic, fascia temporalis (Schumacher 1972) | | |
| insertion | medial surface of coronar aponeurosis and medially to surangular (Lakjer 1926) | | |
| function | adduction of lower jaw (mediad and caudodorsad) | | |
| synonyms | <i>adductor mandibulae A2 profundus</i> (Diogo and Abdala 2010), <i>adductor mandibulae (parietal, supraoccipital and opisthotic part)</i> (Wyneken 2003), <i>adductor mandibulae externus(:) Pars/Portio profunda</i> (Poglayen-Neuwall 1953, 1966; Schumacher 1972, 1973, Kiliass 1957, Hacker 1954, Dalrymple 1975, 1977, Lemell et al. 2000, Wyneken 2003: figure 2.20, Tvarožková 2006, Natchev and Weisgram 2007, Natchev et al. 2009, 2010, Singer 2009), <i>adductor mandibulae externus profundus</i> (Lakjer 1926: III with five possible portions A-E, Lubosch 1933, 1938, Rieppel 1990), <i>adductor mandibulae externus superior</i> (Iordansky 1996: maes, 2010), <i>adductor mandibularis externus profunda</i> (Schumacher 1953/54, 1954/55a, b, 1956a, c), <i>splenius capitis</i> (Arencibia et al. 2006) | | |
| comments | can be reduced in <i>Chelus fimbriatus</i> (see Lemell et al. 2010, but see also Poglayen-Neuwall 1966) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 20** | m. adductor mandibulae externus Pars profundus atypica | m. addmanetePFUATY | V |
| origin | anteroventral part of parietal [exactly dorsally to m. adductor mandibulae internus Pars pseudotemporalis (No. 23-24)] | | |
| insertion | ventral most part of medial face of coronar aponeurosis (short before its insertion) to lower jaw and/or rictal plate | | |
| function | adduction of lower jaw (mediad and caudodorsad) | | |
| synonyms | <i>adductor mandibulae externus Portio profunda atypica</i> (Poglayen-Neuwall 1953: <i>P.pro.atypica</i>) | | |
| comments | only described for <i>Mauremys caspica</i> , <i>Cuora amboinensis</i> | | |
| 21 | m. adductor mandibulae externus Pars superficialis | m. addmaneteSFI | V |
| origin | postorbital, parietal, dorsally from quadrate, squamosal, prootic, opisthotic, fascia temporalis, (Schumacher 1973: basisphenoid: = possibly he meant basioccipital) | | |
| insertion | dorsally or ventrally to coronar aponeurosis, few fibres coronoid, dentary, surangular, rhamphotheca (Schumacher 1973), lateral face of mandible (Lakjer 1926), rostral head: posteriorly to rictal plate (<i>Pelusios niger</i>) | | |
| function | adduction of lower jaw (dorsad and posterodorsad) | | |
| synonyms | <i>adductor mandibulae A2 superficialis</i> (Diogo and Abdala 2010), <i>adductor mandibulae (prootic part)</i> (Wyneken 2003), <i>adductor mandibulae externus medialis</i> (Poglayen-Neuwall 1953: <i>Pelodiscus sinensis</i>), <i>adductor mandibulae externus medialis (II dors)</i> (Lakjer 1926), <i>adductor mandibulae externus(:) Pars/Portio superficialis</i> (Lakjer 1926: <i>II dors.</i> , Poglayen-Neuwall 1953, Hacker 1954, Schumacher 1972, 1973, Kiliias 1957, Dalrymple 1975, 1977, Lemell et al. 2000, Wyneken 2003: figure 2.20, Tvarožková 2006, Natchev and Weisgram 2007, Natchev et al. 2009, 2010, Singer 2009, Lemell et al. 2010: squamosal head of Pars superficialis may be "Prof" of figure 4A, the postorbital head fused with Pars medialis, No. 17, may be "Ext" of figure 4C and "Sup" of figure 4A; see comment below), <i>adductor mandibulae externus postorbitalis</i> (Iordansky 1996: maep/maepo, 2010), <i>adductor mandibularis externus superficialis</i> (Lubosch 1933, 1938: partim for trionychids, Schumacher 1953/54, 1954/55a, b, 1956a, c), <i>transversus cervicalis</i> (Arencibia et al. 2006) | | |
| comments | in some species the portion is clearly separated into a squamosal- and a postorbital region related head, the former can fuse with the Pars medialis (No. 17) (Poglayen-Neuwall 1966); the latter is possibly homologous to the m. zygomaticomandibularis (No. 22) (see text for details) | | |
| 22** | m. zygomaticomandibularis | m. zygmán | V |
| origin | by tendon or directly from the medial and/or ventral aspect of the zygomatic arch (jugal, quadratojugal), partly from ventromedial part of temporal fascia, lateral face of quadrate | | |
| insertion | partly tendinuously at the lateral aspects of the dentary and surangular area, almost reaching their ventral edges | | |
| function | adduction of lower jaw (dorsad) | | |
| synonyms | <i>adductor mandibularis externus partim</i> (Lakjer 1926: <i>I</i> , Lubosch 1933, Poglayen-Neuwall 1953), <i>adductor mandibularis externus partim</i> (Schumacher 1953-56), <i>adductor mandibulae externus partim</i> (Shah 1963: Ad.M.E.), <i>adductor mandibulae externus superficialis partim</i> (Poglayen-Neuwall 1953), <i>adductor mandibulae externus zygomaticomandibularis</i> (Schumacher 1972, 1973: II-B2b(iv), Iordansky 1987: maez, Diogo and Abdala 2010), <i>masseter</i> (Ogushi 1913b: No. 13, <i>occipito-squamoso-maxillaris partim (?)</i> (Gräper 1932), <i>adductor mandibulae internus pterygoideus</i> (Lubosch 1933: as drawn in figure 21), George and Shah 1955a), <i>zygomatico(-)mandibularis</i> (Dalrymple 1975, 1977) | | |
| comments | only known for Trionychia | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|-------------------------|---------------------|
| 23-28 | m. adductor mandibulae internus complex | - | V |
| synonyms | <p><u>adductor mandibulae internus as whole structure (incl. Partes pterygoidei, No. 26-28 et pseudotemporales, No. 23-24; if not separately discussed):</u> <i>M. adductor mandibulae internus</i> (Weisgram 1985, Van Damme and Aerts 1997, Wochesländer et al. 1999), <i>adductor mandibulae internus pars pterygoideus</i> (Natchev et al. 2009: with a note that Partes pseudotemporalis and "pterygoideus" were not separable from each other), <i>adductor mandibulae medius</i> partim (George and Shah 1955a, Shah 1963: Ad.MM), <i>adductor mandibularis medius</i> partim (Edgeworth 1935, Shah 1963: Ad.M.M.), <i>Flügelmuskel</i> (Wiedemann 1803: No. 2, p. 79), <i>internus</i> (Tvarožková 2006), <i>internal adductor</i> (Lemell et al. 2000) <i>mediale Kaumusculatur</i> (Fuchs 1931, 1933), <i>pterygoideus</i> (Thomson 1932: also <i>pterygo-maxillary</i>), <i>pterygoideus internus</i> partim (Stannius 1854), <i>pterygoideus</i> (Bojanus 1819-21: No. 2, Owen 1866, Ogushi 1913b: No. 16, Fuchs 1915, Versluys 1919, Zdansky 1923-25), <i>pterygo-maxillaris</i> partim (Hoffmann 1890: No. 10), <i>pterygo-maxillary</i> (Thomson 1932: also <i>pterygoideus</i>), <i>pterygoid</i> (Edgeworth 1907), <i>Pterygoidmuskulatur</i> (Kaumusculatur) (Fuchs 1915), <i>pterygoideus anterior</i> partim (Adams 1919), <i>pterygomandibularis</i> (Versluys 1919: also pterygoideus)</p> <p><u>Pars pseudotemporalis (if Pars pseudotemporalis superficialis and Pars intramandibularis are present but were not separately discussed):</u> <i>adductor mandibularis anterior</i> (Schumacher 1953-56: unclear nomenclature), <i>adductor mandibulae medius</i> partim (Shah 1963: Ad.M.M.), <i>Flügelmuskel</i> partim (Wiedemann 1803), <i>pterygoideus anterior</i> partim (Adams 1919), <i>pterygoideus</i> partim (Bojanus 1819-21: No. 2), <i>pterygoid</i> partim (Edgeworth 1907), <i>adductor mandibularis medius</i> partim (Edgeworth 1935), <i>posterior adductor</i> (Lemell 2010: figure 4A, D) <i>pterygo-maxillaris</i> partim (Hoffmann 1873-78, 1890: No. 10), <i>pseudotemporalis</i> partim (Lakjer 1926, Poglayen-Neuwall 1953a), <i>pseudotemporalis</i> (Dalrymple 1975, Wyneken 2003), <i>pterygoideus</i> partim (Ogushi 1913b: No. 16), <i>pterygoideus</i> partim (Owen 1866), <i>pterygoideus internus</i> partim (Stannius 1854)</p> <p><u>pterygoideus as a whole (incl. dorso-, ventro-, posteropterygoideus if not separately discussed or if not separated):</u> <i>adductor internus pterygoideus</i> (lordansky 2010), <i>adductor mandibulae internus</i> (Edgeworth 1935, Shah 1963: Ad.M.I), <i>adductor mandibulae internus Pars pterygoideus</i> (lordansky 1987, 1996, Natchev and Weisgram 2007: also ... <i>pterygoideus</i>), <i>adductor mandibularis internus Portio pterygoidea</i> (Poglayen-Neuwall 1966), <i>adductor mandibularis internus (= pterygoideus)</i> (Kiliias 1957), <i>adductor mandibulae internus pterygoideus = Pterygoideus</i> (Lubosch 1933), <i>Flügelmuskel</i> partim (Wiedemann 1803), <i>pterygoideus</i> (Arencebia et al. 2006), <i>pterygoideus</i> partim (Bojanus 1819-21: No. 2), <i>pterygoideus anterior</i> (Adams 1919), <i>pterygoid muscles</i> (Gregory and Adams), <i>pterygoid muscle</i> (Lemell 2010), <i>pterygoid</i> partim (Edgeworth 1907), <i>pterygoideus</i> (Shiino 1913, Tvarožková 2006), <i>pterygo-maxillaris</i> partim (<i>Pterygoideus</i>) (Hoffmann 1873-78, 1890: No. 10), <i>pterygoideus</i> (No. 16) + <i>pterygo-mandibularis</i> (Ogushi 1913b: No. 17), <i>pterygoideus</i> partim (Owen 1866), <i>pterygoideus Pars dorsalis</i> (Cryptodira) (Schumacher 1973: II-B2d(iii)), <i>pterygoideus internus</i> partim (Stannius 1854)</p> <p><u>Pars superficialis + Pars intramandibularis together as a whole:</u> <i>adductor internus digastricus</i> (lordansky 2010), <i>adductor mandibulae internus digastricus</i> (lordansky 1996: maid), <i>flat superficial bundle of pseudotemporalis</i> (lordansky 1996), <i>parietomandibularis</i> (Schumacher 1955b, 1956c), <i>pseudotemporalis Pars digastrica</i> (lordansky 1996)</p> <p><u>posterior and pseudotemporalis together:</u> <i>adductor mandibulae medius</i> (Edgeworth 1935)</p> | | |
| 23 | m. adductor mandibulae internus Pars pseudotemporalis (principalis) | m. addmanitePSETEM(PRI) | V |
| origin | processus descendens parietalis, parietal; partly posterior region of the orbital cavity (interorbital septum), prootic and frontal; medially to Pars pseudotemporalis superficialis (No. 24) | | |
| insertion | together or without the pterygoideus portions (No. 26-28) via the subarticular aponeurosis or directly to the medial aspect of the lower jaw (processus coronoideus dentalis, prearticulare, surangulare, into fossa primordialialis, cartilago meckeli); if Pars intramandibularis (No. 25) exists it inserts to the Zwischensehne | | |
| function | multidirectional arrangement of lower jaw (mainly orsomedial) | | |
| synonyms | <p><i>adductor internus pseudotemporalis</i> (lordansky 2010), <i>adductor mandibulae internus pseudotemporalis</i> (Lubosch 1938: also temporalis, Barghusen 1973), <i>adductor mandibulae internus pars pseudotemporalis</i> (Natchev and Weisgram 2007), <i>adductor mandibulae internus temporalis</i> (Lubosch 1938: also pseudotemporalis), <i>adductor mandibulae posterior Portio medialis</i> (Schumacher 1953/54: <i>Podocnemis</i>, <i>Pelusios</i>), <i>adductor mandibulae posterior</i> (? Sato et al. 1997: MAMP), <i>adductor mandibulae posterior Portio rostralis</i> (Schumacher 1953/54: <i>Chelone</i>, <i>Caretta</i>, Hacker 1954), <i>pseudotemporalis</i> (Schumacher 1973, Tvarožková 2006, Diogo and Abdala 2010), <i>pseudotemporalis (mediale Portion)</i> (Poglayen-Neuwall 1953), <i>pseudotemporalis Pars profunda</i> (Poglayen-Neuwall 1953, 1966), <i>pseudotemporalis</i> (lordansky 1987, 1996), <i>pterygoideus externus</i> (Kesteven 1942-45)</p> | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|-----------------------|---------------------|
| 24 | m. adductor mandibulae internus Pars pseudotemporalis superficialis | m. addmanitePSETEMSFI | V |
| origin | dorsal area of processus descendens parietalis, partly postorbital | | |
| insertion | directly on surangular part of proc. coronoideus or on internal tendon; if intramandibularis present to Zwischensehne | | |
| function | multidirectional arrangement of lower jaw (mainly dorsomedial) / stabilisation of Pars intramandibularis (No. 25) (if present) | | |
| synonyms | <i>adductor mandibulae internus digastricus, dorsal belly</i> (Iordansky 1996: maid), <i>pseudotemporalis</i> (Wyneken 2001), <i>pseudotemporalis (laterale Portion)</i> (Poglayen-Neuwall 1953), <i>parietomandibularis caput dorsale</i> (Schumacher 1954/55b), <i>pseudotemporalis Pars superficialis</i> (Poglayen-Neuwall 1953, 1966), <i>pseudotemporalis Portio dorsalis</i> (Schumacher 1953/54: <i>Chelone, Caretta</i>) | | |
| 25 | m. adductor mandibulae internus Pars intramandibularis | m. addmaniteITRMAN | V |
| origin | Zwischensehne | | |
| insertion | lateral to cartilago meckeli, in fossa primordialis | | |
| function | possibly together with Pars pseudotemporalis superficialis (No. 24), multidirectional arrangement of lower jaw | | |
| synonyms | <i>adductor mandibular A?</i> (Diogo and Abdala 2010), <i>adductor mandibulae internus digastricus, ventral belly (intramandibularis)</i> (Iordansky 1996: maid), <i>inframandibularis</i> (Wyneken 2003: only as depiction in figure 2.21), <i>intermandibularis partim</i> (Wyneken 2001: discussed as a part of intermandibularis which ends in a tendon that is connected to „pseudotemporalis“), <i>intramandibularis</i> (Poglayen-Neuwall 1953, Schumacher 1973: II-B2d(ii), Dalrymple 1975, Rieppel 1990, Tvarožková 2006), <i>parietomandibularis caput ventrale</i> (Schumacher 1954/55b), <i>pseudotemporalis Portio ventralis (M. intramandibularis)</i> (Schumacher 1953/54: <i>Chelone, Caretta</i>) | | |
| 26 | m. adductor mandibulae internus Pars pterygoideus dorsalis | m. addmanitePTEDOR | V |
| origin | caudally and dorsally at pterygoid: partly posterior to the dorsal face of palatine, processus descendens parietalis, caudally at septum interorbitalis, postorbitalis, jugal, maxillare | | |
| insertion | by tendon together or without Pars pseudotemporalis (No. 23) to prearticulare or directly to jaw joint, processus coronoideus, prearticulare or surangulare | | |
| function | adduction of lower jaw (rostradorsad in mediad direction), multidirectional arrangement of lower jaw | | |
| synonyms | <i>anterior component adductor mandibulae internus pterygoideus</i> (Barghusen 1973), <i>adductor mandibulae internus Pterygoideus dorsalis</i> (Lubosch 1938), <i>dorsale Abteilung des pterygoideus</i> (Lakjer 1926: <i>Amyda cartilaginea</i>), <i>pterygoideus dorsal part</i> (Wyneken 2003: figure 2.21), <i>pterygoideus</i> (Lakjer 1926), <i>pterygoideus anterior</i> (Sato et al. 1997: MPta), <i>pterygoideus internus</i> (Kesteven 1942-45), <i>pterygoideus Pars dorsalis</i> (Hacker 1954, Schumacher 1973: Cryptodira, Dalrymple 1975), <i>pterygoideus Pars rostromedialis</i> (Schumacher: Pleurodira), <i>pterygoideus Port. dors.</i> (Ogushi 1913b: No. 16), <i>pterygoideus Portio dorsalis</i> (Schumacher 1953/54: <i>Chelone, Caretta</i>), <i>pterygomandibularis dorsalis</i> (Diogo and Abdala 2010) | | |
| 27 | m. adductor mandibulae internus Pars pterygoideus posterior | m. addmanitePTEPOS | V |
| origin | caudally at processus of palatine, dorsally and ventrally at pterygoid, medially at quadrate, at prootic, in a medial raphe with contralateral muscle | | |
| insertion | tendinously and directly to processus retroarticularis of articulare, partly to surangulare | | |
| function | multidirectional arrangement of lower jaw (mainly dorsomedial) | | |
| synonyms | <i>pterygoideus Pars ventro-posterior</i> (Schumacher 1973, text: <i>Podocnemis</i>), <i>pterygo-mandibularis</i> (Ogushi 1913b: No. 17, Hacker 1954), <i>pterygoideus (Part)</i> (Hacker 1954), <i>pterygoideus Portio ventralis bzw. M. intramandibularis</i> (Schumacher 1953/54: <i>Chelone, Caretta</i>), <i>posterior component adductor mandibulae internus pterygoideus</i> (Barghusen 1973), <i>posterior Part of the pterygoideus</i> (Mc Dowell 1963), <i>posterior portion of pars ventralis</i> (Dalrymple 1975), <i>pterygoideus medius partim</i> (Kesteven 1942-45) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 28 | m. adductor mandibulae internus Pars pterygoideus ventralis | m. addmanitePTEVTR | V |
| origin | ventrolaterally at pterygoid, posterolaterally at palatine | | |
| insertion | by tendon without (own pterygoid tendon) or with Pars pterygoideus dorsalis (No. 26) (via internal tendon) or directly to processus coronoideus, prearticular; directly by some fibres to connective tissue of upper ramphotheca, jugal, maxilla, surangular | | |
| function | multidirectional arrangement of lower jaw (mainly rostromedial) | | |
| synonyms | <i>adductor mandibulae internus Pterygoideus ventralis</i> (Lubosch 1938), <i>pterygoideus Pars ventralis</i> (Hacker 1954, Schumacher 1973: Cryptodira, Dalrymple 1975), <i>pterygoideus Pars ventro-lateralis</i> (Schumacher 1973: Pleurodira), <i>pterygoideus Port. ventr.</i> (Ogushi 1913b: No. 16), <i>pterygoideus Portio medialis</i> (Schumacher 1953/54: <i>Chelone</i> , <i>Caretta</i>), <i>Ventralschicht des pterygoideus</i> (Lakjer 1926: <i>Amyda cartilaginea</i>), <i>pterygomandibularis ventralis</i> (Diogo and Abdala 2010) | | |
| 29 | m. adductor mandibulae posterior (Pars principalis) | m. addmanpos(PRI) | V |
| origin | 1-2 heads, anteromedially at quadrate, postorbital, parietal, medial to adductor mandibulae externus medialis (No. 17) | | |
| insertion | some fibres directly, the major part with an own tendon or with the internal tendon of the adductor mandibulae internus portions (23-28) to the articular, prearticular, surarticular; some fibres to cartilago meckeli and into the fossa primordialis | | |
| function | multidirectional arrangement of lower jaw (mainly caudodorsad) | | |
| synonyms | <i>adductor internus posterior</i> (Iordansky 2010), <i>adductor mandibulae A2-PVM</i> (Diogo and Abdala 2010), <i>adductor mandibulae internus Pars posterior</i> (Iordansky 1987, 1996), <i>pars medialis of external adductor</i> (Lemell 2010: figure 4A, possibly also figure 4D), <i>adductor mandibulae posterior</i> (Poglayen-Neuwall 1953, 1966, in most species: Schumacher 1953/54-56, Schumacher 1972, 1973: II-B2c, Barghusen 1973, Dalrymple 1975, Weisgram 1985, Wochesländer et al. 1999, Wyneken 2003: 'adductor mandibulae post.' in figure 2.21, Tvarožková 2006, Natchev and Weisgram 2007, Natchev et al. 2009), <i>adductor mandibulae posterior Portio caudalis</i> (Schumacher 1953/54: <i>Chelone</i> , <i>Caretta</i> , Hacker 1954), <i>adductor mandibulae posterior Portio intermedia et lateralis</i> (Schumacher 1953/54: <i>Podocnemis</i>), <i>adductor posterior</i> (Lubosch 1933), <i>hintere innere Abteilung des adductor posterior</i> (Lakjer 1926: kaud/caud), <i>pterygoideus medius partim</i> (Kesteven 1942-45), <i>posterior adductor</i> (Lemell et al. 2000), <i>quadrato-mandibularis</i> (Ogushi 1913b: No. 15) | | |
| comments | innervation: n. trigeminus (n. V), changing origins from externus or internus branches of V3 or directly from V3 | | |
| 30** | m. adductor mandibulae posterior Pars rostralis | m. addmanposROS | V |
| origin | prootic (Lakjer 1926) | | |
| insertion | dorsal face of cartilago meckeli, laterally to insertion of Pars anterior (Lakjer 1926) | | |
| function | multidirectional arrangement of lower jaw (mainly caudad) | | |
| synonyms | <i>vordere äußere Abteilung des adductor posterior</i> (Lakjer 1926: rost./rostr.) | | |
| comments | only found in <i>Dermochelys coriacea</i> (Lakjer 1926) and <i>Lissemys punctata</i> (Schumacher 1955a, b), <i>Pelusios sinuatus et subniger</i> (Schumacher 1953/54) | | |
| 31-33/42 | "m. inter-mandibularis" complex | - | V / VII |
| synonyms | <u>intermandibular musculature as a whole, if portions of m. intermandibularis (No. 31) or a separation to of constrictor colli Pars intermandibularis (No. 42) are not separately discussed: intermandibularis</u> (Lakjer 1926, Fuchs 1933, Lubosch 1933, Edgeworth 1935, Shah 1963: Im., Schumacher 1973: II-B3'"), Wyneken 2003, Diogo and Abdala 2010), <i>intermaxillary</i> (Thomson 1932: also <i>mylohyoid</i> , <i>mylo(-)hyoideus</i> , Bojanus 1819-21: No. 13, Alessandrini 1834a, Stannius 1854, Owen 1866, von Bayern 1884, Walter 1885, Hoffmann 1890: No. 19a synonym, Burne 1905: No. 19a, Gräper 1932: mh, Gräper 1933), <i>mylohyoid</i> (Thomson 1932: also <i>intermaxillary</i>), <i>intermaxillaris</i> (Hoffmann 1890a: No. 19a, Ogushi 1913b: No. 22, Hacker 1954) | | |
| 31 | m. intermandibularis (Pars principalis) | m. iteman(PRI) | V |
| origin | medially at lower jaw, mostly dentary, dorsally of cartilago meckeli, partly reaching the symphysis of the dentaries | | |
| insertion | medial raphe with contralateral muscle, partly continuing with the constrictor colli Pars oralis posteriorly | | |
| function | regulation of the volume of the mouth cavity, breathing, lifts the tongue | | |
| synonyms | <i>C2mv partim</i> (Lubosch 1933), <i>anterior mylohyoid</i> (Edgeworth 1907, 1935), <i>anterior part of intermandibularis</i> (Fuchs 1931), <i>intermandibularis</i> (Kesteven 1942-45: Scv. 1, Weisgram 1985, Spindel et al. 1987, Van Damme and Aerts 1997, Wochesländer et al. 1999, Wyneken 2001, Arencibia et al. 2006, Natchev and Weisgram 2007, Natchev et al. 2008, 2009, 2010, Singer 2009), <i>intermandibularis anterior</i> (Lubosch 1938), <i>intermandibularis Pars oralis</i> (Poglayen-Neuwall 1953: M.C.1v), <i>intermaxillaris</i> , synonym: <i>mylohyoideus</i> (Shiino 1913: based on described innervation), <i>intermaxillaire</i> (Rouvière 1906: No. 1), <i>mylohyoideus anterior</i> (Gnanamuthu 1937), <i>mylohyoideus anterior principalis</i> (Sondhi 1958), <i>mylo-hyoïdien</i> (Chaine 1900), <i>vorderer Teil des M. intermandibularis</i> (Fuchs 1931) | | |
| comments | innervation: n. trigeminus (V) (Sondhi 1958: "Ramus ad musculus mylohyoideus", at least anterior part) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|---------------------|---------------------|
| 32** | m. intermandibularis Pars profundus | m. itemanPFU | V |
| origin | dorsal to Pars oralis principalis at medial border of mandible Sondhi (1958) | | |
| insertion | runs transversely medianwards, inserts to gular septum Sondhi (1958) | | |
| function | curves the tongue (Gräper 1932) | | |
| synonyms | <i>mylohyoideus anterior profundus</i> (Sondhi 1958), <i>mylohyoidus Portio mucosae</i> (Gräper 1932: mhm) | | |
| comments | only described for the trionychids <i>Aspideretes leithii</i> (Sondhi 1958) and <i>Apalone ferox</i> (Gräper 1932) | | |
| 33** | m. submentalis | m. submen | V |
| origin | dorsal to anterior end of intermandibularis (from dentals) (Kesteven 1942-45) | | |
| insertion | fibres run transversely without a raphe (Kesteven 1942-45) | | |
| function | mediad movement of the dentaries | | |
| synonyms | <i>submentalis</i> (Kesteven 1942-45) | | |
| comments | only described for <i>Emydura macquariae</i> and in embryos of <i>Chelodina longicollis</i> (Kesteven 1942-45) | | |
| 34 | m. pyramidalis | m. pyr | VI |
| origin | medially at eye ball | | |
| insertion | to membrana nictitans and potentially to the lower eye lid | | |
| function | pulls the membrana nictitans dorsocaudally over the eye | | |
| synonyms | <i>der ungemein gro?se Augenmuskel des dritten Augenlids</i> (Tiedemann 1819: p. 355, „... beiden ?ehr beweglichen Augenlider einen gro?sen gemein?chaftlichen Muskel enthalten.“: indicates a relationship with m. depressor palpebrae inferioris, No. 14-15), <i>levator membranae nictitantis</i> (Ogushi 1913b: No. 10 – only to Membr.nict., Schumacher 1972: 5.3.9), <i>membranae nictitantis + palpebrae inferioris in commune</i> (Tiedemann: cited after Ogushi 1913b), N.N. (Albers 1808:82), <i>palpebrae musculus pyramidalem</i> (Bojanus 1819-21: Fig. 129 BB), <i>palpebrae pyramidalis</i> (Cuvier 1835), <i>pyramidalis</i> (Leuckard 1876, Martin and Moale 1881, Thomson 1932, Underwood 1970, Eger 2006, Brudenall et al. 2008), <i>pyramidalis + M. bursalis in commune partim</i> (Albers: cited after Ogushi 1913b), <i>pyramidalis nictitans</i> (to Membr. nict. and lower lid) (Edgeworth 1907), <i>retractor membranae nictitantis</i> (<i>Clemmys</i> : not yet distinguished from Retractor bulbi/Retr.bursalis) (Nishi 1938b) | | |
| 35 | m. quadratus (principalis) | m. qua(pri) | VI |
| origin | medial at eye bulbus, a possible second head from the edge of foramen opticus; between the origin of pyramidalis (No. 34) and the insertion of retractor bulbi (No. 38) | | |
| insertion | to the posterior angle of both eye lids or if two heads exist 1. to the lower eye lid by a thin tendon and 2. posteroventrally into the upper eye lid | | |
| function | elongates way of nictitans tendon pyramidalis and prevents a contact of this tendon to tractus opticus (Leuckard 1876) | | |
| synonyms | <i>depressor palpebrae inferioris et superioris</i> (Hoffmann 1890: No. 8), <i>levator palpebrae superior</i> (Ogushi 1913b: No. 9 – to both lids), <i>palpebralis</i> (Bojanus 1819-21: No. 12), <i>pyramidalis + M. bursalis in commune partim</i> (Albers: cited after Ogushi 1913b), <i>quadratus</i> (into sclerotic) (Leuckard 1876, Edgeworth 1907, 1935), <i>retractor palpebrae</i> (Schumacher 1972: 5.3.8), <i>retractor palpebrae superioris</i> (<i>Clemmys</i> : to upper lid and Membr. nict.) (Nishi 1938b) | | |
| 36* | m. quadratus superior | m. quasio | VI |
| origin | with one head from anterior face of tractus opticus (n. II) and possibly also a second head from sclera of eye bulbus, next to the origin of m. pyramidalis (Ogushi 1913b) | | |
| insertion | tendinous to the ventral face of the upper eyelid (Ogushi 1913b) | | |
| function | movement (lifting) of upper eye lid | | |
| synonyms | <i>levator palpebrae superioris</i> (Ogushi 1913b: No. 9-Anhang) | | |
| comments | only found in 2 adult specimens of <i>Pelodiscus sinensis</i> | | |
| 37 | m. rectus posterior | m. recpos | VI |
| origin | by 1-2 heads from basisphenoid and also from an area caudoventrally of foramen opticum, caudally to the origin of rectus inferior (No. 3) | | |
| insertion | posteromedially or posteriorly at eye bulbus; intercrossing fibres with retractor bulbi in insertion | | |
| function | movement of the eye bulbus (rotation to posteromedial direction) | | |
| synonyms | <i>abducens partim</i> (Filatoff 1907), <i>lateral rectus</i> (Brudenall et al. 2008), <i>rectus externus</i> (Hoffmann 1890: No. 1), <i>rectus lateralis</i> (Johnson 1913, Ogushi 1913b: No. 3, Shiino 1913, Schumacher 1972), <i>rectus oculi externus</i> (Bojanus 1819-21: No. 8, Owen 1849, Stannius 1854), <i>rectus posterior</i> (Underwood 1970, Kuratani 1987, Eger 2006), <i>rectus temporalis</i> (Nishi 1938b) | | |

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| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|---------------------|---------------------|
| 38 | m. retractor bulbi | m. rtobul | VI |
| origin | by 1-2 heads from basisphenoid, deep inside the posterior edge of the eye cavity | | |
| insertion | by 1-2 heads and partly via connective tissue posteroventrally at the eye bulbus, anteroventrally or around the insertion of the tractus opticus (n. II) into the eye bulbus | | |
| function | retraction of the eye bulbus | | |
| synonyms | <i>abducens</i> partim (Filatoff 1907), <i>external rectus</i> (Martina and Moale 1881), <i>suspensor oculi</i> (Bojanus 1819-21 No. 11), <i>retractor bulbi</i> (Brudenall et al. 2008), <i>re(c)tractor oculi</i> (Hoffmann 1873-78, Johnson 1913, Ogushi 1913b: No. 8, Shiino 1913, Thomson 1932, Nishi 1938b, Underwood 1970, Schumacher 1972, Kuratani 1987, Eger 2006) | | |
| 39* | m. cervicomandibularis | m. cviman | VII |
| origin | anterior cervical vertebrae (no details known) | | |
| insertion | at least to posterior region of the squamosal | | |
| function | lateral bending of the head | | |
| synonyms | <i>cervico(-)mandibularis</i> (Lubosch 1933: C.m.) | | |
| comments | only described for <i>Apalone ferox</i> (Lubosch 1933) | | |
| 40-44 | m. constrictor colli complex | - | VII |
| synonyms | constrictor colli as a whole (also when unclear distinction to pars oralis or m. intermandibularis): <i>C₂dv</i> (Ruge 1896), <i>constrictor colli</i> (Natchev and Weisgram 2007, Natchev et al. 2008, 2010, Singer 2009), <i>constrictor colli</i> (Lubosch 1933, Edgeworth 1935, George and Shah 1955a, b, Shah 1963, Schumacher 1972, Schumacher 1973: V-C1, Scanlon 1982: COL, Weisgram 1985, Spindel et al. 1987, Wyneken 2001, 2003, Herrel et al. 2008), <i>interhyoideus</i> (Diogo and Abdala 2010), <i>longissimus colli</i> (Ruge 1897, Hacker 1954), <i>peaucier</i> (Rouvière 1906: No. 2), <i>sphincter colli</i> partim (Fürbringer 1874, 1897, Hoffmann 1890a: No. 19, Burne 1905 : No. 19 partim, Ogushi 1913: No. 31, Shiino 1913), <i>mylohyoideus posterior</i> partim (Fürbringer 1874, Burne 1905, Gnanamuthu 1937, Sondhi 1958), <i>sphincter colli b/B</i> (Gräper 1933), <i>sphincter colli posterior</i> (Lubosch 1933), <i>sphincter (latissimus) colli</i> (Gräper 1932: sph), <i>subcutaneous cervicis</i> (Walter 1885), <i>Un peucier (which is in the position of) trapèze</i> (Cuvier 1835), <i>Stellvertreter mehrerer Halsmuskeln der Säugetiere</i> (Meckel 1818), <i>transverse jugulaire</i> (Chaine 1900) constrictor colli as a whole together with sphincter corticis of Ogushi (1913b): <i>latissimus colli (Partes anterior et posterior)</i> (Bojanus 1819-21: No. 21a, b), <i>sphincter colli</i> (Burne 1905 : No. 19, Van Damme and Aerts 1997), constrictor colli (forth region) (Scanlon 1982), constrictor colli as a whole together with m. intermandibularis (No. 31): <i>N.N.</i> (Ahley 1962: not described as such, but drawn as one muscle, m. intermandibularis in nor described), <i>mylohyoideus</i> partim (Gräper 1932, 1933) | | |
| 40 | m. constrictor colli Pars aboralis (= principalis) | m. conclIABO | VII |
| origin | dorsally at neck in a median raphe | | |
| insertion | ventral medial raphe, partly continuing with posterior neck constrictor (sphincter corticis of Ogushi 1913b) | | |
| function | compresses throat as in swallowing (Ashley 1962), in <i>Lissemys punctata</i> two heads in insertion: "contraction, therefore, would not only elevate but broaden the sheet and diffuse the pressure over a larger area" (Gnanamuthu 1937) | | |
| synonyms | <i>C₂ dv aboralis</i> (Lubosch 1933), <i>constrictor colli aboralis</i> (Lubosch 1938), <i>latissimus colli</i> (Ashley 1962), <i>latissimus colli (pars anterior)</i> partim (Bojanus 1819-21: No. 21b, Stannius 1854, Owen 1866 : part), <i>sphincter colli mittlere (b) und hintere (c) Portio</i> (Gräper 1932: <i>Chelonia mydas</i>), <i>sphincter colli Portio posterior</i> (Ogushi 1913: No. 31b) | | |
| comments | innervation: n. facialis (n. VII), posterior fibres also by cervical nerves | | |
| 41 | m. constrictor colli Pars spinalis | m. conclISPI | VII |
| origin | laterally at cervical vertebrae or tendon ("Zwischensehne") to <i>coracohyoideus</i> (No. 58-60) | | |
| insertion | medial raphe, contact to trachea, pharynx (Lubosch 1933), contact to cervicocapitis via Zwischensehne (Gräper 1933) | | |
| function | general constrictor colli: constrictor of neck, pharynx (sensu Schumacher 1973) and levator (Gräper 1932) | | |
| synonyms | <i>C₂ hv</i> (Lubosch 1933), <i>cervicohyoideus</i> (Gräper 1933), <i>coracohyoideus / omohyoideus cauda cervicohyoidea</i> (Gräper 1932, compare to Gräper 1933), <i>Hautmuskel des Halses (jugularis) partim</i> (Wiedemann 1803: No. 13), <i>hyoid superficial constrictor sheet Pars posterior (constrictor colli spinalis)</i> (Kesteven 1942-45: Csv.2'), <i>interhyoideus</i> (Lubosch 1938: C2hv), <i>sphincter colli c/C/(C)</i> (Gräper 1933), <i>vordere Constrictorportion</i> (Ogushi 1913b: following Lubosch 1933: figure 13) | | |
| comments | n. facialis (n. VII) (Gräper 1933) / or completely changes innervation by C1-2 (Kesteven 1942-45: <i>Chelodina longicollis</i>) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 42 | m. constrictor colli Pars intermandibularis | m. concliITEMAN | VII |
| origin | medially at posterior part of the lower jaw / from median border of cbl (Kesteven 1942-45) | | |
| insertion | ventral medial raphe, partly continuing with the m. intermandibularis anteriorly and the caudally situated Pars oralis (No. 43) | | |
| function | regulation of the volume of the mouth cavity, breathing | | |
| synonyms | <i>C2mv partim</i> (Ruge 1897, Lubosch 1933), <i>interhyoideus</i> (Kesteven 1942-45), <i>m. intermandibularis Pars caudalis</i> (Poglayen-Neuwall 1953: M.C ₂ v, 1966), <i>intermandibularis Pars caudalis: m. interhyoideus</i> (Iordansky 1996), <i>intermandibularis posterior</i> (Lubosch 1938), <i>latissimus colli (pars anterior) partim</i> (Bojanus 1819-21: No. 21b, Rathke 1848, Stannius 1854, Owen 1866: part), <i>mylohyoideus posterior</i> (Sondhi 1958), <i>constrictor colli Pars oralis (intermandibularis Pars caudalis)</i> (Schumacher 1973), <i>sphincter colli Pars anterior</i> (Ogushi 1913b: No. 31a), <i>Hautmuskel des Halses (jugularis) partim</i> (Wiedemann 1803: No. 13) | | |
| 43 | m. constrictor colli Pars oralis | m. concliORA | VII |
| origin | squamosal, up to ligamentum nuchae/supraoccipital | | |
| insertion | ventral medial raphe, partly continuing with the m. constrictor colli Pars intermandibularis (No. 42) | | |
| function | constriction of the posterior mouth cavity | | |
| synonyms | <i>C₂ dv oralis</i> (Lubosch 1933), <i>constrictor colli oralis</i> (Lubosch 1938), <i>Hautmuskel des Halses (jugularis) partim</i> (Wiedemann 1803: No. 13), <i>hyoid superficial constrictor sheet Pars anterior</i> (Kesteven 1942-45: Csv.2'), <i>latissimus colli (pars anterior) partim</i> (Bojanus 1819-21: No. 21b), <i>sphincter colli a</i> (Gräper 1933), <i>sphincter colli Portio anterior</i> (Ogushi 1913: No. 31a) | | |
| 44** | m. constrictor colli Pars superficialis | m. concliSFI | VII |
| origin | ventrolaterally of the anterior part of the neck and laterally in the head skin by a thin origin/tendon, anterior-posterior course | | |
| insertion | ventral median raphe (together with m. constrictor colli aboralis) | | |
| function | possibly lateral movement of the head against the neck, pulls mouth angle caudad and helps mouth closure | | |
| synonyms | <i>constrictor colli</i> (Sondhi 1958) | | |
| comments | only known for <i>Aspideretes leithii</i> (Sondhi 1958) | | |
| 45 | m. depressor mandibulae | m. depman | VII |
| origin | with 1-2 heads caudally, laterally and dorsally from squamosal: seldom from quadrate, quadratojugal, opisthotic, cornu branchial-II, partly in contact with dorsal neck muscles, and with constrictor colli Pars oralis (No. 34) via a raphe | | |
| insertion | partly tendinously from posterior and ventral aspect of articular and processus retroarticularis, laterally and medially from angular, caudally at jaw joint (capsule) | | |
| function | lowers lower jaw | | |
| synonyms | <i>apertores oris partim</i> (Rathke 1848), <i>apertor oris s. digastricus</i> (Owen 1849), <i>digastric</i> (Ashley 1962), <i>digastricus maxillae</i> (Bojanus 1819-21: No. 3), <i>depressor maxillae externus</i> (Ogushi 1913b: No. 19: separated in a lateral and medial part, medial part ostensibly described as depressor medialis internus following Schumacher 1972), <i>depressor mandibulae pars superficialis</i> ? (Scanlon 1982), <i>depressor mandibulae</i> (Ruge 1896: C ₂ md, Shiino 1913, Lubosch 1933: in figure 20 depicted as "Pterygoideus", 1938, Edgeworth 1935, Kesteven 1942-45: d.m.n, Hacker 1954, Mc Dowell 1961, 1963, Shah 1963, Barghusen 1973, Schumacher 1973: V-C1a, Weisgram 1985, Lemmell and Weisgram 1997, Sato et al. 1997: MDM, Van Damme and Aerts 1997, Wocheisländer et al. 1999, Lemell et al. 2000, Aerts et al. 2001, Diogo and Abdala 2010, Natchev and Weisgram 2007, Natchev et al. 2008, 2009, 2010, Singer 2009), <i>depressor mandibulae (complex) partim</i> ? (Wyneken 2001, 2003: <i>Dermochelys coriacea</i>), <i>digastric</i> (Martin and Moale 1881), <i>Maulöffner (apertor oris)</i> (Wiedemann 1803: No. 2, p.79), <i>Senker des Unterkiefers</i> (Stannius 1854), <i>squamoso-maxillaris</i> (Hoffmann 1890: No. 11, Gräper 1932, 1933), <i>squamoso-maxillaris (depressor maxillae)</i> (Burne 1905: No. 11) | | |
| 46 | m. dilatator tubae | m. diltub | VII |
| origin | processus squamosis quadrati, ventral face of the posterior wall of the quadrate, squamosal | | |
| insertion | skinny wall of the eustachian tube, partly at cavitas muscularis of articular (Ogushi 1913b) | | |
| function | stabilisation of eustachian tube | | |
| synonyms | <i>apertores oris partim</i> (Rathke 1848, sensu Ogushi 1913b), <i>depressor mandibulae internus</i> (Ogushi 1913b: No. 20), <i>dilatator tubae</i> (Bojanus 1819-21: No. 4, Hoffmann 1890a: No. 12, Ruge 1896, Burne 1905: No. 12, McDowell 1961, 1963, Schumacher 1973: V-C1b, Scanlon 1982), <i>dilatator tubae Eustachii</i> (Edgeworth 1935), <i>depressor mandibulae complex partim</i> ? (Wyneken 2003: <i>Dermochelys coriacea</i>) | | |
| comments | innervation: n. facialis (n. VII), n. glossopharyngeus (McDowell 1963) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|-----------------------|---------------------|
| 47 | m. branchiomandibularis visceralis | m. bramanvis | IX |
| origin | distally at cbl and encompassing other muscles originating at cbl (Gräper 1932) | | |
| insertion | posteromedially at lower jaw | | |
| function | pulls cornu branchial-I (and whole hyoid apparatus) ventrad, lowers mouth floor (breathing when jaw is closed) (Gräper 1932), indirect movement of cornu branchial I ventrad, air suction inside mouth cavity and pressing inside lung in a second step (Gräper 1932) | | |
| synonyms | <i>branchiomandibular muscle</i> (Lemell et al. 2010), <i>branchio(-)mandibularis</i> (Edgeworth 1935, Shah 1963: B.M., Weisgram 1985, Lemell and Weisgram 1997, Van Damme and Aerts 1997, Wochesländer et al. 1999, Lemell et al. 2000, Aerts et al. 2001, Natchev and Weisgram 2007, Natchev et al. 2008, 2009, 2010, Singer 2009), <i>branchiomandibularis visceralis</i> (Lubosch 1933: C3, 1938, Luther & Lubosch 1938, Schumacher 1972, 1973: V-C2a, Spindel et al. 1987), <i>cornu (-)maxillaris</i> (Hoffmann 1890a: No. 23, Burne 1905: No. 23), <i>digastrigue</i> (Chaine 1900), <i>geniohyoideus</i> (Arencibia et al. 2006), <i>geniohyoideus lateralis</i> (Walter 1885: gh'), <i>hyobranchialis</i> Partim (Diogo and Abdala 2010), <i>hyomandibularis</i> (von Bayern 1884, Ogushi 1913b: No. 18, Gräper 1932: hm, also <i>hyomaxillaris</i> , Gräper 1933, Kesteven 1942-45: M. hy., Hacker 1954), <i>hyo-maxillaire superficiel</i> (Rouvière 1906: No. 3), <i>hyo(-)maxillaris</i> (Bojanus 1819-21: No. 16, Owen 1866, Shiino 1913, Gräper 1932: also <i>hyomandibularis</i> , Gräper 1933), <i>hyo-maxillaris</i> (Thomson 1932), <i>mandibulohyoideus</i> (Sondhi 1958), <i>pterygoideus posterior</i> (? Sato et al. 1997: MPtp), <i>stilomaxillaris</i> (Alessandrini 1834a) | | |
| 48* | m. tensor s. dilatator vaginae venae nasoophthalmicae | m. tendilvagvaenasoph | IX |
| origin | anteriorly and ventrally from processus mastoideus of squamosal | | |
| insertion | wall of the venae nasoophthalmicae | | |
| function | flexure of the venae during lateral flexure of the head/neck | | |
| synonyms | <i>tensor (s.) dilatator vaginae venae nasoophthalmicae</i> (Ogushi 1913b: No. 21, Edgeworth 1935) | | |
| comments | only described for <i>Pelodiscus sinensis</i> | | |
| 49 | m. constrictor laryngis (principalis) | m. conlar(pri) | X |
| origin | hyoid (processus lingualis) (Gaunt and Gans 1969) (medial to dilatator laryngis) | | |
| insertion | cricoid cartilage (Gaunt and Gans 1969) / rima glottis and proc. ascendens of cartilago aryaenoidea Schumacher 1972), cartilago thyreocricioidea, cartilago thyroidea | | |
| function | acts as a sphincter (Gaunt and Gans 1969), opens the rima glossis (Gräper 1932) | | |
| synonyms | <i>constrictor glottidis</i> (Bojanus 1819-21: No. 20), <i>constrictor laryngis</i> sic (Thomson 1932), <i>constrictor laryngis</i> (Edgeworth 1935, Schumacher 1973: V-D2b, Ogushi 1913b: No. 30, Diogo and Abdala 2010), <i>crico-hyoid</i> (Mitchell and Morehouse 1863), <i>crico-hyoideus</i> (Gaunt & Gans 1969), <i>hyolaryngeus</i> (von Bayern 1884), <i>hyo-thyreo-cricioideus</i> (Alessandrini 1834b), <i>sphincter glottidis</i> (Gräper 1932), <i>sphincter laryngis</i> (Schumacher 1972), <i>genioglossus</i> (Kesteven 1942-45: Th.v.: sic: very unclear description but depiction is identifying) | | |
| 50* | m. constrictor laryngis profundus | m. conlarpfu | X |
| origin | anterior margin and fascia of fossa of copus hyoideus (medial to constrictor laryngis principalis) | | |
| insertion | ventrolaterally to processus musculi of cartilago aryaenoideus | | |
| function | pulls laryngeal apparatus ventrad into fossa of corpus hyoideus | | |
| synonyms | <i>hyo-arytaenoideus (dexter)</i> (Alessandrini 1834b) | | |
| comments | only described for <i>Caretta caretta</i> (Alessandrini 1834b) | | |
| 51 | m. dilatator laryngis | m. dillar | X |
| origin | hyoid (Gaunt and Gans 1969) or / and trachea/ cartilago thyreocricioidea (Schumacher 1972) or connective tissue of rima glottis (Gräper 1932) | | |
| insertion | body and processus muscularis of aryaenoidea ("Stellknorpel") (Gaunt and Gans 1969) | | |
| function | pulls laryngeal apparatus inside groove of corpus hyoidis and by pushing cartilago aryaenoidea ("Stellknorpel") median it clodes rima glottis (Gräper 1932) | | |
| synonyms | <i>crico-arytenoid</i> (Mitchell and Morehouse 1863), <i>crico-arytenoideus</i> (Gaunt & Gans 1969), <i>dilatator glottidis</i> (Bojanus 1819-21: No. 19), <i>dilatator laryngis</i> (Gräper 1932, Thomson 1932, Schumacher 1972, 1973: V-D2a, Ogushi 1913b: No. 29, Diogo and Abdala 2010), <i>thyreo-arytaenoideus</i> (Alessandrini 1834b); drawn but not described or labelled (von Bayern 1884:64) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 52 | m. plastrocapitis | m. placap | X / XI |
| origin | dorsal face of plastron (anterior to middle area) (Schumacher 1972) | | |
| insertion | squamosal, quadratum, by tendon cornu branchial-I (Ogushi 1913b, Gräper 1932) (Schumacher 1972 wrote by mistake cornu branchial-II instead of I), also possible: lateral to the atlas (<i>Caretta caretta</i>) or by two heads to the squamosal and laterally to the atlas (<i>Lepidochelys kempfi</i>) | | |
| function | indirect movement of cornu branchial-I (Gräper 1932), retraction of the head | | |
| synonyms | <i>capiti(-)plastralis</i> (Edgeworth 1935, Lubosch 1938), <i>capiti-plastralis</i> (<i>Sternocleidomastoideus</i>) (Fürbringer 1874: No. 1, Hoffmann 1890a: No. 38, Burne 1905: No. 38), <i>capitis cervico-plastralis</i> (George and Shah 1955a), <i>cucullaris s. capiti-plastralis</i> (Edgeworth 1935), <i>Kopfnicker, oberflächlicher Kopfbeuger, Brustbein- und Zitzenmuskel</i> (<i>sternomastoideus</i>) (Meckel 1828: §69, No. 1), <i>L'analogue du sterno-mastoidien</i> (Cuvier 1835), <i>plastro(-)squamosus</i> (Ogushi 1913b: No. 33, Schumacher 1972: 7.2.5.2., 1973: V-C4b, Scanlon 1982: PS), <i>rectus capitis cervico-plastralis</i> (George and Shah 1955b, Shah 1963), (Walter 1885: only in plate III, Fig. 21) <i>sternomastoid</i> (Ashley 1962: draw complete muscle and described only the head attaching cornu brachiale I), <i>sterno(-)mastoideus</i> (Bojanus 1819-21: No. 22, Stannius 1854: §114, No. 2, Owen 1866, Rüdiger 1868, von Bayern 1884, Shiino 1913, Gräper 1932: sm, also <i>omo-capitis</i> , Gräper 1933), <i>sterno-thyroid</i> (Kesteven 1942-45: s. thy), <i>omo-capitis</i> (Gräper 1932: sc (not depicted) for <i>Chelonia mydas</i> , also <i>sterno(-)mastoideus</i>), <i>trapezius</i> (Diogo and Abdala 2010) | | |
| comments | innervation: n. vagus (X) et accessorius (XI) (Scanlon 1982), also R. ventralis n. cervicalis III (Ogushi 1913, Shiino 1913, Schumacher 1972), hypoglossum (XII) (Gräper 1932), R. accessorius n. vadi and possible C3-4 (Fürbringer 1874), X/XI/XII (indistinguishable) (Kesteven 1942-45); most turtles: XI (Ogushi), CIII in <i>Pelodiscus sinensis</i> (Ogushi); in this species XI is reduced, also CIV in <i>Apalone ferox</i> (Gräper 1932) | | |
| 53 | m. squamosobranchiale | m. squbra | X / XI |
| origin | squamosal (Kesteven 1943-45) | | |
| insertion | distally at cornu branchial-I | | |
| function | pulls cornu branchial-I to skull (Gräper 1932) | | |
| synonyms | <i>branchiosquamosum</i> (Van Damme and Aerts 1997), cornu – <i>hyoideus-capitis</i> (Kesteven 1942-45: C.hy.c.), <i>n.n.</i> (Gräper 1932: muscle No. 10 in <i>Chelodina longicollis</i>), <i>sternomastoideus</i> (Ashley 1962: draw in connection with plastrocapitis, but described only as squamosobranchiale) | | |
| 54 | m. atlantoexoccipitis | m. atleoc | XII |
| origin | ventrolaterally from CV1 or by tendon from collosquamosal | | |
| insertion | posteroventrally/lateral to exoccipital | | |
| function | ventrolateral movement of the cranium | | |
| synonyms | <i>atlanto-exoccipitis</i> (Ogushi 1913b: No. 45, Herrel et al. 2008), <i>collo-capitis longus</i> (Scanlon 1982) | | |
| comments | innervation: R. epistropheo-squamosi of n. XII (Ogushi 1913b), in <i>Chryssemys picta</i> by CII (Scanlon 1982) | | |
| 55 | m. branchiohyoideus (principalis) | m. brahyo(pri) | XII |
| origin | cornu branchial-I | | |
| insertion | cornu hyale and surrounding area of corpus hyoideus | | |
| function | cbl is rotated forwards and outwards, thus the buccopharyngeal cavity is widened (Gnanamuthu 1937), important for breathing (Gräper 1932)/ dilatator of laryngeal apparatus / pharyngeal area (Ogushi 1913) | | |
| synonyms | <i>branchiohyalis</i> (Lubosch 1933: Brhy), <i>branchiohyoideus</i> (Schumacher 1972, 1973: V-C2b, Weisgram 1985: also misspelling as <i>branchiohyoideus</i> , Spindel et al. 1987, Van Damme and Aerts 1997, Natchev and Weisgram 2007, Natchev et al. 2010), <i>cornu hyoideus</i> (Gnanamuthu 1937, Sondhi 1958), <i>dorsal part of M. hyoglossus</i> (Gräper 1932: hgd, except for <i>Apalone ferox</i>), <i>dorsal part of M. hyoglossus partim</i> (Gräper 1932: hgd, for <i>Apalone ferox</i>), <i>hyobranchialis Partim</i> (Diogo and Abdala 2010), <i>hyoideus</i> (Rüdiger 1868), <i>hyohyoideus</i> (Natchev et al. 2009), <i>intercornuatus partim</i> (Ogushi 1913b: No. 25b, Edgeworth 1935, Shah 1963), <i>stilo-hyoideus</i> (Alessandrini 1834b), <i>thyro-hyoideus</i> (Kesteven 1942-45: Th.hy.) | | |
| comments | innervation: XII (Ogushi 1913b, Sondhi 1958), n. glossopharyngeus (IX) (Schumacher 1973: but he does not explain why it should not be XII innervated and does not cite anyone saying the muscle would be IX innervated) | | |
| 56 | m. branchiohyoideus dorsalis | m. brahyodor | XII |
| origin | tip of cornu branchial-I | | |
| insertion | cornu hyale and surrounding area of corpus hyoideus | | |
| function | dilatator of laryngeal apparatus / pharyngeal area (Ogushi 1913) | | |
| synonyms | <i>first part of geniohyoid muscle</i> (Lemell et al. 2010: GhI), <i>intercornuatus partim</i> (Ogushi 1913b: No. 25a), <i>dorsal part of M. hyoglossus partim</i> (Gräper 1932: hgd: <i>Apalone ferox</i>) | | |

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| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 57 | m. collosquamosus | m. cllsqu | XII |
| origin | basis of second to third cervical vertebrae | | |
| insertion | tendon to squamosal (prootic) | | |
| function | laterad movement of the head | | |
| synonyms | <i>collo-squamosus</i> (Hoffmann 1890: No. 28, Burne 1905: No. 28, Nishi 1916, Schumacher 1972: No. 4.4, Scanlon 1982: CSQ), <i>epistropheo-squamosus ventralis</i> (Ogushi 1913b: No. 41, Herrel et al. 2008), <i>Le trachelomastoidien</i> (Cuvier 1935), <i>second part of geniohyoid muscle</i> (Lemell et al. 2010: GhII), <i>Seitenmuskel des Kopfes (rectus-lateralis)</i> , (Wiedemann 1803: No. 9), <i>Seitlicher gerader Kopfmuskel</i> (Meckel 1828: No. 7, p. 122), <i>testo-occipitis</i> (Van Damme and Aerts 1997), <i>trachelo(-)mastoideus</i> (Bojanus 1819-21: No. 26, Owen 1849, Shah 1963: T.M.), <i>trachilo-mastoideus</i> (George & Shah 1955 a, b) | | |
| comments | innervation: n. hypoglossus (XII) (Ogushi 1913b), also n. accessorius (XI) (Scanlon 1982) | | |
| 58-60 | m. coracohyoideus complex | - | XII + C |
| synonyms | <u>as a whole or not separated</u> : <i>coracobranchialis medialis et lateralis et coracopharyngeus</i> (Lubosch 1933: different muscle heads s.s.), <i>coracohyoid muscle</i> (Lemell et al. 2010), <i>coraco(-)hyoideus</i> (Stannius 1854, Rüdiger 1868, Fürbringer 1874, Ogushi 1913b: No. 34 incl. „M. constrictor tracheae“, Schumacher 1973: V-C4a, Scanlon 1982: CHY, Weisgram 1985, Spindel et al. 1987, Wyneken 2001, 2003, Natchev and Weisgram 2007, Natchev et al. 2008, Singer 2009), <i>coraco(-)hyo(-)stiloideus</i> (Alessandrini 1834a: also <i>omohyoideus et scapulohyoideus</i>), <i>omohyoid</i> (Ashley 1962), <i>omo(-)hyoideus</i> (Bojanus 1819-21: No. 14, Alessandrini 1834a: also <i>coraco(-)hyo(-)stiloideus</i> and <i>scapulohyoideus</i> , von Bayern 1884, Shiino 1913, Gräper 1932: oh, Hacker 1954), <i>omohyoideus et omo-oesophagus</i> (Walter 1885: also <i>sternohyoideus partim</i>), <i>omohyoideus</i> (Cuvier 1835), <i>rectus cervicis</i> (Edgeworth 1935, George and Shah 1955a, Shah 1963: RC, Herrel et al. 2008), <i>scapulohyoideus</i> (Alessandrini 1934a: also <i>omohyoideus</i> and <i>coraco(-)hyo(-)stiloideus</i>), <i>Schulterzungenbeinmuskel</i> (Meckel 1828: p. 169, No. 3), <i>sternohyoideus</i> (Diogo and Abdala 2010), <i>sternohyoideus partim</i> (Walter 1885: also <i>omohyoideus et omo-oesophagus</i>) | | |
| 58 | m. coracohyoideus (Pars principalis) | m. cachyo(PRI) | XII |
| origin | coracoid, runs below esophagus | | |
| insertion | some fibres to esophagus, cb I and II and/or corpus hyoidei; head: <i>omooesophagus</i> (Walter 1885) | | |
| function | draw the hyoid apparatus backwards and upwards – helps depress jaw, retract head, and lower oral floor (Ashely 1962; <i>omooesophagus head</i> : together with hypoesophagus (No.) it leads the esophagus when the neck shows a saggital flexure (Walter 1885) | | |
| synonyms | <i>coraco(-)hyoideus</i> (Hoffmann 1890: No. 20, Burne 1905: No. 20, Lemell and Weisgram 1997, Van Damme and Aerts 1997, Wochesländer et al. 1999, Lemell et al. 2000, Aerts et al. 2001, Arencibia et al. 2006, Natchev et al. 2009, 2010) | | |
| comments | only described for <i>Chelonia mydas</i> (Hoffmann) and <i>Dermochelys coriacea</i> (Burne 1905) to be separated from the atlas; innervation: n. XII (Scanlon 1982), anterior part: n. S2-3, posterior part: n. S4-5, Caput cervicale in addition to n. S3 also n. hypoglossus (XII) (Gräper 1932, Schumacher 1972), ramus ventralis of Nn. cervicali 4-5 | | |
| 59 | m. coracohyoideus Pars dorsalis | m. cachyoDOR | XII |
| origin | coracoid | | |
| insertion | hyal apparatus | | |
| function | see No. 58 | | |
| synonyms | <i>coraco-cornu (-)hyoideus</i> (Hoffmann 1890: No 21, Burne 1905: No. 21), <i>am weitesten dorsal gelegene Fasern bilden ein selbständiges, kräftiges Bündel</i> (Gräper 1932: <i>Chelodina longicollis</i>) | | |
| comemnts | only described for <i>Dermochelys coriacea</i> (Burne 1905), <i>Chelonia mydas</i> (Hoffmann 1890), also <i>Chelodina longicollis</i> (Gräper 1932) | | |
| 60 | m. coracohyoideus Pars interbranchialis | m. cachyoTEBRA | XII |
| origin | cornu branchial-II | | |
| insertion | cornu branchial-I | | |
| function | nears cornu branchial-I and cornu branchial-II | | |
| synonyms | <i>coracohyoideus Pars interbranchialis</i> (Schumacher 1972, Weisgram 1985, Natchev and Weisgram 2007), probably: <i>depressor mandibulae</i> (Arencibia et al. 2006), <i>hyo-glossus</i> (Kesteven 1942-45 : Hy.gl.), <i>intercornuatus</i> (Gräper 1932 : <i>Chelodina longicollis</i> , p.192, Van Damme and Aerts 1997, Aerts et al. 2001, Natchev et al. 2010) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 61** | m. entoplastrohyoideus | m. entplahyo | XII |
| origin | anterior part of entoplaston (Sondhi 1958) | | |
| insertion | posterior part of basihyoid (Sondhi 1958) | | |
| function | draws the hyoid back (Gnanamuthu 1937) | | |
| synonyms | <i>sternohyoideus</i> (Gnanamuthu 1937), <i>sternothyroideus</i> (Sondhi 1958: "sternum" = entoplaston, see Vickaryous & Hall 2006) | | |
| 62* | m. epiplastrohyoideus | m. epiplahyo | XII |
| origin | dorsally from epiplastron (Sondhi 1958) | | |
| insertion | proximal part of cbl and middle component of corpus hyoideus (Sondhi 1958) | | |
| function | similar to No. 61 | | |
| synonyms | <i>sternohyoideus</i> (Sondhi 1958: "clavicle" = epiplastron, see Vickaryous & Hall 2006) | | |
| comments | only described for <i>Asperideres leithii</i> (Sondhi 1958) | | |
| 63 | m. genioglossus | m. genglo | XII |
| origin | symphysis of dentaries and anterior third of medial side of dental (Schumacher 1972) | | |
| insertion | tongue, ventral face of hypoglossum, partly cornu hyale or fascia intermaxillaris medialis (Schumacher 1972), anterior border of corpus hyoideus ("basihyoid") | | |
| function | pulls the hyoid apparatus to anterior and the tongue outside (Gräper 1932) | | |
| synonyms | <i>genio-glosse</i> (Chaine 1900), <i>genio(-)glossus</i> (Bojanus 1819-21: No. 17, Alessandrini 1834a, Owen 1866, Walter 1885, Ogushi 1913b: No. 26, Gräper 1932: gg, Gräper 1933, Lubosch 1933, Edgeworth 1935, Gnanamuthu 1937, Hacker 1954, Shah 1963: G.G., Schumacher 1972: 7.2.4.3., 1973: V-C3d, Spindel et al. 1987, Van Damme and Aerts 1997, Wochesländer et al. 1999, Lemell et al. 2000, Natchev and Weisgram 2007, Natchev et al. 2008, 2009, 2010, Diogo and Abdala 2010), <i>genioglossus et hyoglossus inferior</i> (von Bayern 1884: the "hyoglossus inferior" head is the one inserting to the hypoglossum), <i>genioglossus externus</i> (Sewertzoff 1929), <i>maxillo(-)glossus</i> (Hoffmann 1890a: No. 25, Thomson 1932), <i>genioglossus partim</i> (Gräper 1932: in <i>Chelonia mydas</i> , lateral part) <i>genioglossus externus</i> (George and Shah 1955a) | | |
| 64 | m. geniohyoideus (Pars principalis) | m. genhyo(PRI) | XII |
| origin | symphysis of dentaries, medial at lower jaw!, median raphe of M. intermandibularis, tongue (ventral of corpus hyoidis) | | |
| insertion | cornu branchial-I (= "posterior cornua" of Gnanamuthu 1937), in <i>Emydura subglobosa</i> also cornu branchial-II | | |
| function | draws whole hyoid apparatus forward, in co-operation with the posterior hyoid muscles it serves to fix the hyoid apparatus Gnanamuthu (1937), bringst cbl to median level (Gräper 1932) | | |
| synonyms | <i>genio(-)hyoideus</i> (Bojanus 1819-21: No. 15, Alessandrini 1834a, Hoffmann 1890a: No. 22, Burne 1905: No. 22, Ogushi 1913b: No. 23, Shiino 1913, Gräper 1932: gh, Gräper 1933, Lubosch 1933, Edgeworth 1935, Gnanamuthu 1937, Hacker 1954, George and Shah 1955a, Sondhi 1958, Shah 1963: G.H., Schumacher 1973: V-C3b, Spindel et al. 1987, Lemell and Weisgram 1997, Van Damme and Aerts 1997, Wochesländer et al. 1999, Lemell et al. 2000, Wyneken 2001, 2003, probably: Arencibia et al. 2006, Diogo and Abdala 2010, Natchev and Weisgram 2007, Natchev et al. 2008, 2009, 2010, Singer 2009), <i>geniohyoideus medialis</i> (Walter 1885: gh), <i>geniohyoideus profundus s. lateralis</i> (von Bayern 1884), <i>genio-hyoïdien</i> (Chaine 1900), <i>hyo-maxillaire profond</i> (Rouvière 1906: No. 4) | | |
| comments | innervation: n. hypoglossus (XII) (Schumacher 1972), in <i>Trachemys decussata</i> also by n. glossopharyngeus (IX) (Shiino 1913) | | |
| 65 | m. geniohyoideus Pars lateralis | m. genhyoLAT | XII |
| origin | lower and anterior border of dentary (George and Shah 1955a), possibly by tendon (von Bayern 1884) | | |
| insertion | laterally to the proximal end of cornu branchial-I (George and Shah 1955a), also thyroid cartilage and around hypoglossus | | |
| function | protractor and elevator of hyoid (George and Shah 1955a: together with m. genioglossus) | | |
| synonyms | <i>genio(-)glossus internus</i> (George and Shah 1955a), <i>geniohyoideus</i> (Kesteven 1942-45: G.gl. sic), <i>geniohyoideus partim</i> (Gnanamuthu 1937: one of the described "bundles"), <i>geniohyoideus superficialis s. lateralis</i> (von Bayern 1884) | | |
| 66 | m. hyoesophagus | m. hyoesopha | XII |
| origin | distal end of cornu branchial-I | | |
| insertion | dorsally on esophagus (near insertion of omoesophagus head of m. coracohyoideus (Pars principalis) (Walter 1885) | | |
| function | together with m. omoesophagus head of m. coracohyoideus (Pars principalis) (No.) it leads the esophagus when the neck shows a saggital flexure (Walter 1885) | | |
| synonyms | <i>hyo(-)oesophagus</i> (von Bayern 1884, Walter 1885), after Walter (1885) also described by Cuvier (tome III, p 270) | | |
| comments | in <i>Emys orbicularis</i> it is stronger on the right side than the left side (Walter 1885) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 67 | m. hyoglossus (Pars principales) | m. hyoglo(PRI) | XII |
| origin | proximal end of cornu branchial-I and medially from cornu hyale (Schumacher 1972) | | |
| insertion | into tongue (Schumacher 1972), or dorsal median raphe of tongue (Ogushi 1913b), cornu hyale (George and Shah 1955a) | | |
| function | retractor and depressor of hyoid (George and Shah 1955a, with caution due to derived anatomy of the muscle in <i>Lissemys punctata</i>) | | |
| synonyms | <i>cornu(-)glossus</i> (Hoffmann 1890a: No. 24, Burne 1905: No. 24, Thomson 1932: also <i>hyoglossus</i>), <i>hyo(-)glossus</i> (Bojanus 1819-21: No. 18, Cuvier 1835, Owen 1866, Stannius 1854, Walter 1885: hgl, Ogushi 1913b: No. 24, Thomson 1932: also <i>cornu -glossus</i> , Lubosch 1933, Edgeworth 1935, Gnanamuth 1937: with upper and lower deviations, Hacker 1954, Shah 1963: H.G., Schumacher 1972, 1973: V-C3c, Spindel et al. 1987, Van Damme and Aerts 1997, Diogo and Abdala 2010, Natchev and Weisgram 2007, Natchev et al. 2010), <i>hyo(-)glossus</i> (George and Shah 1955a, b), <i>stiloglossus</i> (Alessandrini 1834a), <i>hyoglossus, Teil, der wirklich in die Zunge einstrahlt</i> (Gräper 1932: <i>Apalone ferox</i>), <i>hyoglossus posterior</i> (von bayern 1884), <i>ventral part of M. hyoglossus</i> (Gräper 1932: hgd, except for <i>Apalone ferox</i>) | | |
| 68 | m. hyoglossus Pars ventralis | m. hyogloVTR | XII |
| origin | more anterior and median than hyoglossus Pars principales from proximal end of cbl (Gnanamuthu 1937), muscle fibres originating from dorsal face of corpus hyoideus and proc. linguae (von Bayern 1884) | | |
| insertion | processus lingualis of corpus hyoideus (Gnanamuthu 1937: "processus entoglossus") or directly into tongue | | |
| function | retractor and depressor of hyoid (George and Shah 1955a, with caution due to derived anatomy of the muscle in <i>Lissemys punctata</i>) | | |
| synonyms | <i>hyoglossus partim</i> (Gnanamuthu 1937: one of the two bundles), <i>Muskelzüge [...] radiär in die Zunge ausstrahlen[d]</i> (von Bayern 1884: part of "dritte Gruppe der Zungenmuskeln") | | |
| 69 | m. hypoglossoglossus | m. hypgloglo | XII |
| origin | dorsolaterally at hypoglossum | | |
| insertion | anteroventrally into tongue (close relation to Mm. hyoglossus and especially genioglossus, Gräper 1932) | | |
| function | hypoglossum against proc. lateralis and endoglossum and whole tongue rostrad (Gräper 1932: <i>Apalone ferox</i>), posterior tongue rostrad (Ogushi 1913: <i>Pelodiscus sinensis</i>) | | |
| synonyms | <i>entoglossus partim</i> (Edgeworth 1935), <i>entoglossus-glossus</i> (Ogushi 1913b: No. 27, Schumacher 1973: V-C3a and N.N. in C3e second part), <i>entoglossus(-)glossus partim</i> (Schumacher 1972: 7.2.4.4), <i>genioglossus partim</i> (Gräper 1932: in <i>Chelonia mydas</i> , medial part), <i>hypoglossus(-)glossus</i> (George and Shah 1955a, Schumacher 1973: V-C3e, Spindel et al. 1987, Natchev and Weisgram 2007, Natchev et al. 2009: g.g., 2010: hpg, Diogo and Abdala 2010), <i>hypoglossolateralis</i> (Sondhi 1958), <i>transversalis</i> (Sewertzoff 1929: in <i>Emys orbicularis</i> , separated from <i>m. genioglossus</i>), <i>lingual musculature ?</i> (Natchev et al. 2008), <i>transversalis linguae</i> (Sewertzoff 1929: in <i>Testudo graeca</i> , still connected to <i>m. genioglossus</i> – develops from an muscle Anlage called <i>genioglossus internus</i>), <i>verticalis linguae</i> (Gräper 1932), <i>lingualis</i> (Alessandrini 1834a: Fig. 4h), <i>Zahl der Muskelfasern, welche von der unteren Knorpelplatte entspringt und [...] zum Zungenknorpel [...] selbst gelangt</i> (von Bayern 1884: part of "dritte Gruppe der Zungenmuskeln") | | |
| 70 | m. hypoglossohyoideus | m. hypglohyo | XII |
| origin | processus lingualis of corpus hyoidei | | |
| insertion | dorsal at hypoglossum (very short), in <i>Chelonia mydas</i> still connected with genioglossus (Gräper 1932) | | |
| function | sagittal movement of corpus hyoideus backwards and hypoglossum forwards: elongates tip of the tongue (Gräper 1932), moves tongue rostrad (Gräper 1933) | | |
| synonyms | <i>entoglossus partim</i> (Edgeworth 1935), <i>entoglossus(-)glossus partim</i> (Schumacher 1972: 7.2.4.4, Diogo and Abdala 2010), <i>entoglossus-hyoglossalis</i> (Sondhi 1958), <i>entoglossus-hyoideus</i> (Ogushi 1913b: No. 28 with nomenclature as used in Textfigur 11, wrongly described as a second <i>entoglossus-glossus</i> : see also comment by Gräper 1932, p. 192), <i>hyoentoglossus</i> (Gräper 1932: also <i>protrusor linguae</i>), <i>hyoglossus</i> (Alessandrini 1834a: Fig. 4g), <i>hypoglossus(-)hyoideus</i> (George and Shah 1955a, Shah 1963, Spindel et al. 1987, Van Damme and Aerts 1997), <i>protrusor linguae</i> (Gräper 1932: p, also <i>hyo(-)entoglossus</i> , Gräper 1933), <i>Zahl der Muskelfasern, welche von der unteren Knorpelplatte entspringt und [...] [zur] Zunge selbst gelangt</i> (von Bayern 1884: part of "dritte Gruppe der Zungenmuskeln") | | |
| 71 | m. levator pharyngis | m. levpha | XII |
| origin | cornu branchial-I | | |
| insertion | ventral to oesophagus | | |
| function | dorsad movement, and possibly constriction of the pharynx | | |
| synonyms | <i>levator pharyngis</i> (Ogushi 1913b: No. 36), <i>omohyoideus Portio hyopharyngea</i> (Gräper 1932), <i>stilo-pharyngeus</i> (Alessandrini 1834a) | | |
| comments | in <i>Chelydra serpentina</i> and <i>Chelodina longicollis</i> still connected with coracohyoideus (Gräper 1932); innervation: n. hypoglossus (XII) (Ogushi 1913b: usually two branches of its posterior root) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|-----------------------|---------------------|
| 72* | m. longitudinalis linguae | m. Itulin | XII |
| origin | median fibrous tissues in front of glottideal region – about the middle of the length of the tongue | | |
| insertion | fibrious tissues at the tip of the tongue | | |
| function | curling upwards of the tongue tip (Gnanamuthu 1937) | | |
| synonyms | <i>longitudinalis linguæ</i> (Gnanamuthu 1937) | | |
| comments | only described for <i>Lissemys punctata</i> (Gnanamuthu 1937: p. 40) | | |
| 73 | m. transversalis linguae | m. tvelin | XII |
| origin | median raphe dorsally at the anterior tip of the tongue (Gnanamuthu 1937) | | |
| insertion | dorsolateral border of tongue | | |
| function | movement of the dorsolateral border of tongue | | |
| synonyms | <i>transversalis linguae</i> (von Bayern 1884), <i>transversalis linguæ</i> (Gnanamuthu 1937) | | |
| 74 | m. verticalis linguae | m. vtilin | XII |
| origin | ventrolateral part of tongue | | |
| insertion | dorsolateral edge of tongue | | |
| function | vertical contraction of the lateral part of the tongue | | |
| synonyms | <i>annulares hyoglossi</i> (Sewertzoff 1929 – develops from an muscle Anlage called <i>genioglossus internus</i>), <i>verticalis linguae</i> (Schumacher 1972, 1973: described as a potential lateral part of <i>genioglossus</i>) | | |
| 75 | m. atlantoepistropheo-occipitis (principalis) | m. atlepiestrocc(pri) | Cld |
| origin | dorsally at first and second cervical vertebrae | | |
| insertion | opisthotic, exoccipital, squamosal | | |
| function | movement of the head in posterodorsad direction | | |
| synonyms | <i>atlanto-epistropheo-occipitis</i> (Hoffmann 1890: No. 32, Schumacher 1972: No. 4.7, Scanlon 1982: AE), <i>epistropheo-squamosal dorsalis</i> (Ogushi 1913b: No. 46: on page 330 wrong as “M. episterno-squamosus ventralis”, Herrel et al 2008), <i>epistropheo-squamosus</i> (Gräper 1932), <i>Großer hinterer gerader Kopfmuskel</i> (<i>Rectus capitis posticus major</i>) (Wiedemann 1802: No. 5, p. 80; 1803), No. 6 (Cuvier 1835: page 316), <i>rectus capitis posticus major</i> (Owen 1849, 1866), <i>rectus capitis posterior major</i> (Bojanus 1819-21: No. 31), <i>rectus capitis posterior maior</i> (Nishi 1916), <i>rectus capitis superficialis</i> (George and Shah 1955a, b, Shah 1963: R.C.S.), <i>suboccipitales (atlanto-epistropheo capitis)</i> (Vallois 1922) | | |
| comments | only in Cryptodira (Shah 1963); innervation: n. S1d (Ogushi 1913b, Scanlon 1982) | | |
| 76 | m. atlantoepistropheo-occipitis profundus | m. atlepiestroccpro | Cd |
| origin | lateral aspect atlas or from ventrolateral aspect of collosquamosus | | |
| insertion | prootic, opisthotic | | |
| function | posterolaterad movement of the head | | |
| synonyms | <i>kleiner hinterer gerader Kopfmuskel</i> (<i>rectus capitis posticus minor</i>) (Wiedemann 1803: No. 6, could also be atlantooccipitis (No. 77), but described as not oblique and to situate directly under atlantoepistropheooccipitis principalis (No. 75) with no differing insertion than this muscle), <i>rectus profundus</i> (George and Shah 1955a), <i>rectus capitis profundus</i> (George and Shah 1955b, Shah 1963: R.C.P.) comment(s): | | |
| comments | in pleurodires (<i>Chelodina longicollis</i>) only atlantoepistropheooccipitis profundus; innervation: possibly n.S1d (after Ogushi 1913b, when the muscle is a ventral partition of muscle above) | | |
| 77 | m. atlantooccipitis | m. atlocc | Cd |
| origin | dorsal or lateral face of first cervical vertebrae (Ogushi 1913b) | | |
| insertion | exoccipital, basioccipital | | |
| function | rotation movements of the head (posterodorsad and laterad) | | |
| synonyms | <i>atlanto-occipitis</i> (Hoffmann 1880: No. 33, Scanlon 1982: AO), <i>collo-capitis brevis</i> (Scanlon 1982: CCB), <i>rectus capitis posterior minor</i> (Bojanus 1819-21: No. 32, Nishi 1916, Lubosch 1933: No. 32), <i>rectus capitis posticus minor</i> (Owen 1866), (<i>suboccipitales</i>) <i>atlanto capitis</i> (Vallois 1922), <i>atlanto-basioccipitales medialis partim</i> (Ogushi 1913b: No. 44, “laterale Portion, deren Fasern viel steiler verlaufen”, Herrel et al. 2008) | | |
| comments | innervation : n. S1 (Scanlon 1982), n. S1d (Vallois 1922) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|---------------------|---------------------|
| 78 | m. atlantoopisthoticus | m. atlopioti | Cd |
| origin | anterodorsally at cervical vertebrae 1 | | |
| insertion | opisthotic | | |
| function | posterolaterad movement of the head | | |
| synonyms | <i>atlanto-opisthoticus</i> (Ogushi 1913b: No. 47, Herrel et al. 2008), <i>cervico-capitis</i> (Ashley 1955), <i>intertransversalis</i> partim (Gasc 1981, with <i>epistropheo-atlantis dorsalis</i> of Ogushi 1913b: No. 43: cvivte-1to -2), <i>m. interspinalis cervicis of the first cervical vertebrae</i> (Scanlon 1982) | | |
| comments | innervation: such as m. atlantoexoccipitis by R. m. epistropheo-squamosi of n. XII, when partition of m. cervicocapitis: nn. S2d-5d (Ogushi 1913b, see comments to m. cervicocapitis), as m. interspinalis cervicis of cvivte-1 by n. S1 (Scanlon 1982) | | |
| 79 | m. cervicocapitis | m. cvicap | Cd |
| origin | dorsally to 3 rd -6 th cervical vertebrae (Ogushi 1913b) | | |
| insertion | tendon to squamosal, supraoccipital, fascia of m. adductor mandibulae externus (II), with 2-4 heads, Sehnenplatte also to cb II (Gräper 1932) | | |
| function | posterodorsad movement of the head | | |
| synonyms | <i>biventer cervical</i> (Ashley 1962), <i>biventer cervicis</i> (Bojanus 1819-21: No. 24, Owen 1849, 1866), <i>cervico-capitis</i> (Hoffmann 1890: No. 15, Burne 1905: No. 15, Schumacher 1972: No. 4.3, Scanlon 1982: CCA), <i>cervico-capitis medialis</i> (Vallois 1922), <i>cervico capitalis</i> (Nishi 1916), <i>cervicocapitis</i> partim (Gräper 1932: x, also <i>omohyoideus (coracohyoideus) Caput cervicale</i> : except " <i>cauda hyoidea</i> "), <i>cervico-hyo-capitis</i> partim (Ogushi 1913b: No. 35: except " <i>cauda hyoidea</i> "), <i>cervico-squamosal</i> (Thomson 1932), <i>dorsale Längsmuskulatur</i> (Lubosch 1933: figure 17: D.I.m.), <i>Kopfbauschmuskel (splenius capitis)</i> (Wiedemann 1803: No. 4, p. 80), <i>L'analogue du splenius de la tête</i> (Cuvier 1835), <i>omohyoideus (coracohyoideus) Caput cervicale</i> (Gräper 1932: also <i>cervicocapitis</i> partim: except " <i>cauda hyoidea</i> "), <i>spinalis capitis</i> (Nishi 1938a, Gasc 1981), <i>spinalis(-)cervico(-)capitis</i> (George and Shah 1955a, b, Shah 1963: S.C.C., Herrel et al. 2008), <i>Zweibäuchiger Nackenmuskel</i> (analog) (Meckel 1828: No. 3, p. 116-117) | | |
| comments | innervation: nn.S2d-5d, nn. S1d-4d (Scanlon 1982), nn.S1d/2d-5d (Vallois 1922) | | |
| 80 | m. colloocipitis | m. cllocc | Cld |
| origin | lateral cervical vertebrae 1-3 (Hoffmann), cervical vertebrae 3 (Scanlon), dorsal first and second cervical vertebrae | | |
| insertion | opisthotic, prootic | | |
| function | posterodorsad movement of the head | | |
| synonyms | <i>collo-ocipitis</i> (Hoffmann 1890: No 27, Scanlon 1982: COC), <i>complexus</i> (Bojanus 1819-21: No. 25, Cuvier 1835, Owen 1866), <i>obliquus capitis</i> (George and Shah 1955a, b, Shah 1963: O.C., Van Damme and Aerts 1997) | | |
| 81 | m. carapacocervico-capitis lateralis Pars capitis | m. carvcicaplatCAP | Cd |
| origin | 1 st costal plate | | |
| insertion | Pleurodira: skull base, prootic, opisthotic (Vallois 1922, Shah 1963); Chelonioidea: parietal, by aponeurosis to squamosal (Hoffmann 1890, Schumacher 1972), more lateral than No. 82 | | |
| function | lateral flexion and rotation of head (Vallois 1922) | | |
| synonyms | <i>Kopfbauschmuskel</i> (Meckel 1828: No. 2, p. 116), (Hoffmann 1890: No. 14, Burne 1905: No. 14, Schumacher 1972: No. 4.2), <i>testo(-)capitis lateralis</i> (Vallois 1922), <i>testo(-)capitis</i> partim (Shah 1963, Herrel et al. 2008), <i>testo-parietali-squamosal</i> (Hoffmann 1890: No. 14 synonym), <i>N.N.</i> (Cuvier 1835: No. 2, p. 316), <i>splenius capitis</i> (Rathke 1848: a, p. 160) | | |
| comments | not in non-marine turtle cryptodires; innervation: nn.S1d-6d | | |
| 82 | m. carapacocervico-capitis medialis Pars capitis | m. carvcicapmedCAP | CIII-VId |
| origin | ventrally in anteriomedian region of carapace, nuchale | | |
| insertion | temporal fascie, more medial than No. 81 | | |
| function | posterodorsad movement of the head | | |
| synonyms | <i>cucularis</i> (Rathke 1848: a, p. 160), <i>Kappenmuskel der höheren Thiere analog</i> (Meckel 1828: No. 1, p. 115), <i>Muscle de la tête #2</i> (Cuvier 1835: No. 1, p. 316), <i>splenius capitis</i> (Bojanus 1819-21: No. 23, Stannius 1854, Gräper 1932: also <i>testoocipitis</i> , Lubosch 1933: No. 23), <i>tecto-occipitalis</i> (Schumacher 1973), <i>testocapitis</i> partim (Shah 1963: T.C., Herrel et al. 2008), <i>testo-capitis medialis</i> (Vallois 1922), <i>testo-occipitis</i> (Hoffmann 1890: No. 13, Burne 1905: No. 13, Gräper 1932, Schumacher 1972: No. 4.1, 1973, Scanlon 1982: TO), <i>testo(-)occipitalis</i> (Nishi 1916, Gräper 1932: also splenius capitis, Lubosch 1933: No. 23), <i>testospinalis capitis</i> (Nishi 1938a, Gasc 1981), <i>Zweibäuchiger Nackenmuskel (biventer cervicis)</i> (Wiedemann 1803: No. 3, p. 79-80) | | |
| comments | only in Cryptodira (Gasc 1981), not in trionychids (Rathke 1848, Ogushi 1913b), not in <i>Chelodina longicollis</i> (Gräper 1932) | | |

| No. | muscle name | muscle abbreviation | general innervation |
|-----------|---|---------------------|---------------------|
| 83* | m. transversalis cervicis | m. tvecvi | Cd |
| origin | cervical vertebrae 3-5/ cervical vertebrae 4-7 | | |
| insertion | cervical vertebrae 1-3, basioccipital | | |
| function | lateroventral movements of the cervical vertebrae | | |
| synonyms | <i>M. transversalis cervicis (TRC)</i> (Bojanus 1819-21, Owen 1866, Hoffmann 1890: No. 17, Burne 1905: No. 17, Callister 2005, Scanlon 1982), <i>Nackenzitzenmuskel, den hintern geraden und schiefen Kopfmuskel der höhern Thiere</i> partim (Meckel 1828), <i>articulo-transversalis longus</i> (Ogushi 1913b: No. 39a), <i>articulo-transversarii longi</i> (Nishi 1916), <i>transversarii obliqui cervicis</i> et <i>M. transversarius cervicis</i> (Vallois 1922), <i>transverse cervical</i> (Ashley 1962), <i>interarticularis superior</i> (Gasc 1981), <i>transversalis cervicis und capitis</i> (Nishi 1938a) | | |
| comments | generally present in turtles but only in <i>Dermochelys coriacea</i> (juvenile) extending to the skull (Burne 1905) | | |
| 84 | m. collocapitis brevis | m. clc capbre | Civ |
| origin | ventrally from cervical vertebrae 1, most medial muscle of cervical vertebrae 1 | | |
| insertion | basioccipital | | |
| function | posteroventrad movement of the head | | |
| synonyms | <i>atlanto-basioccipitalis medialis</i> partim (Ogushi 1913b: No. 44, "mediale Portion", Herrel et al. 2008), <i>collo-capitis brevis</i> (Hoffmann 1890: No. 31, Scanlon 1982: CCB), <i>interarticularis inferior</i> (Gasc 1981), <i>rectus capitis anterior minor</i> (Bojanus 1819-21: No. 30), <i>rectus capitis anticus brevis</i> (Owen 1866), <i>rectus capitis brevis</i> (George and Shah 1955a: R.C.B.), <i>rectus capitis ventralis brevis</i> (George and Shah 1955b: R.C.V.B.) | | |
| 85 | m. constrictor hyoideus | m. conhyo | Cv |
| origin | around cervical vertebrae 5-7 | | |
| insertion | at least posteriorly at cornu branchial-I | | |
| function | primary function presumably related to the abduction and retraction of cornu branchial-I, it presumably plays a role during lateral bending of the neck (Herrel et al. 2008), depressor and elevator of the floor of buccal cavity and other movements of hyoid apparatus (George and Shah 1955a), retractor of head/neck under shell (Shah 1963) | | |
| synonyms | <i>constrictor hyoideus</i> (George and Shah 1955a, b, Shah 1963: C.H., Herrel et al. 2008) | | |
| 86-87 | m. longus colli Pars capitis with 2 portions | - | Cv |
| synonyms | longus colli muscle complex as a whole or only having a non cranial part: <i>cervico-spinalis medialis</i> (Ogushi 1913b: No. 38, Herrel et al. 2008), probably: <i>longus capitis</i> (Arenciba et al. 2006: also <i>longus colli</i>), <i>longus colli</i> (Bojanus 1819-21: No. 28, Cuvier 1835, Owen 1866, Hoffmann 1890: 29, Burne 1905: No. 29, George and Shah 1955a, b, Ashley, 1955, Shah 1963, Scanlon 1982: LC) longus colli Partes capitis-I and -II/III fused: (only cranium related part): <i>collo-capitis longus</i> (Hoffmann 1890: No. 30: as the "oberstes Bündel" of No. 29, Schumacher 1972: No. 4.6 = wrong as dorso-capitis longus in Tabula III), <i>L'analogue du grand droit anterieur</i> partim (Cuvier 1835), <i>rectus capitis anterior longus</i> (Bojanus 1819-21: No 29, Owen 1866), <i>rectus capitis anticus longus</i> (Owen 1849), <i>Vorderer gerader Kopfmuskel oder Beuger</i> (Wiedemann 1803), <i>rectus capitis ventralis longus et major et ventralis minor</i> (George and Shah 1955b, Shah 1963: RCVL et RCVMaj et RCVMin), probably: <i>rectus ventralis</i> (Arenciba et al. 2006: also <i>longus colli</i>) | | |
| 86 | m. longus colli Pars capitis-I | m. loncllCAP-I | Cv |
| origin | by a tendon ventrally from 1 st cervical vertebrae | | |
| insertion | basioccipital | | |
| function | posteroventrad movement of the head | | |
| synonyms | <i>longus colli</i> of CV-1 (Scanlon 1982), <i>rectus capitis ventralis minor</i> (George and Shah 1955b, Shah 1963: RCVMin) | | |
| comments | innervation: for m. longus colli as a whole: nn. S1v-7v (Ogushi 1913b) | | |
| 87 | m. longus colli Pars capitis-II/III | m. loncllCAP-II/III | Cv |
| origin | by a tendon ventrally from 2 nd + 3 rd cervical vertebrae (+4 th) | | |
| insertion | basioccipital | | |
| function | flexure of the head (Wiedemann 1803) | | |
| synonyms | head from cervical vertebrae 2 only: <i>longus colli</i> of CV-2 (Scanlon 1982), <i>rectus capitis ventralis major</i> (George and Shah 1955b, Shah 1963: RCVMaj) head from cervical vertebrae 3 only: <i>longus colli</i> of CV-3 (Scanlon 1982), <i>rectus capitis ventralis longus</i> (George and Shah 1955b, Shah 1963: RCVL) head from cervical vertebrae 2/3(4) together: <i>vorderer gerader Kopfmuskel / rectus capitis anticus</i> (Wiedemann 1803: No. 8), <i>longus colli profundus</i> (Gasc 1981), <i>scalenus anticus</i> (Rathke 1848), <i>vorderer Rippenhalter (scalenus)</i> (Meckel 1828) | | |
| comments | innervation: for m. longus colli as a whole: nn. S1v-7v (Ogushi 1913b) | | |

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| No. | muscle name | muscle abbreviation | general innervation |
|-----------|--|-----------------------|---------------------|
| 88 etc. | m. retrahens capiti collique with four portions all together and one portion inserting to the cranium | - | Cv |
| synonyms | m. retrahens capiti collique as a whole: <i>carapaco-basioccipitalis</i> (Ogushi 1913b: No. 37, Herrel et al. 2008), <i>dorso-occipitis</i> (Hoffmann 1890: No. 26, Burne 1905: No. 26, Thomson 1932, Schumacher 1972: No. 4.5), <i>Großer, vorderer, gerader Kopfmuskel, tiefer Beuger oder Niederzieher des Kopfes</i> (Meckel 1828: No. 2, p. 120), <i>langer Halsmuskel (longus colli)</i> (Wiedemann 1803: No. 7), <i>longus colli superficialis</i> (Gasc 1981), <i>muscle repondant aux fonctions du sacro-luminaire, du transversaire grêle et à celles du long dorsal</i> (Cuvier 1935), <i>retractor colli et capitis</i> (Rathke 1848), <i>retractor muscles of the neck and head</i> (Martin and Moale 1881), <i>retrahens capitis</i> (Noble and Peterson 1931), <i>retrahens/retrachens capitis et colli / (et) collique</i> (Bojanus 1819-21: No. 27, Owen 1849, 1866, Stannius 1854, Shiino 1913, Ashley 1962, George and Shah 1955a, b, Shah 1963: RCC, Scanlon 1982: RC-, Callister 2005, Van Damme et al. 1995, Herrel et al. 2008), <i>(Corresponds in function to) sacro-luminaire et ... transversaire grêle et ... 1e long dorsal</i> (Cuvier (1835) | | |
| 88 | m. retrahens capiti collique Pars carapacobasioccipitis | m. rhecapcllCARBASOCC | Cv I-VII |
| origin | basioccipital (anterior part) | | |
| insertion | dorsal vertebrae 7-8 and surrounded area, ribs | | |
| function | major retractor of the head/neck | | |
| synonyms | bundle 1 of retrahens capitis collique (Van Damme et al. 1995), retrahens capitis et colli (pars anterior) (Scanlon 1982) | | |
| comments | innervation: retrahens capiti collique as a whole: nn. S1v-7v (Ogushi 1913b), n.S3-4 (Scanlon 1982, Callister and Peterson 1992), n.S3v after Thomson 1932 | | |