Table S3: Compilation of all reported *SOX9* mutations associated to CD and ACD.

| ***SOX9* – premature termination codon** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 1 | c.82G>T | p.E28Ter | | NS | CD | NS | NS | [Massardier et al., 2008] |
| 1 | c.122C>A | p.K151Ter | | SRY $^{+}$ | CD | M | NS [neonatal] | **This study** |
| 1 | c.257G>A | p.W86Ter | | 46,XX | CD | F | 12 days | [Meyer et al., 1997] |
| 1 | c.261_262insG | p.T87fs251* | | 46,XY,del[6] [q23.2-23.3] | CD | [M]/ {M} | Alive at 5 yrs | [Okamoto et al., 2010] |
| 1 | c.296delG | p.S99fs109* | | 46,XY | CD | F* | Alive at 5 yrs | [Ninomiya et al., 2000] |
| 1 | c.349C>T | p.Q117Ter | HMG | 46,XY | CD | F* | Alive at 12 yrs | [Meyer et al., 1997] |
| 1 | c.390del7 | p.H131fs248* | HMG | 46,XX | CD | F | NS [neonatal] | **This study** |
| 2 | c.442G>T | p.E148Ter | HMG | 46,XY | CD | F* | NS [neonatal] | [Wagner et al., 1994] |
| 2 | c.442G>T | p.E148Ter | HMG | 46,XX | CD | F | 1 yr 5 mo | [Wada et al., 2009] |
| 2 | c.448G>T | p.E150Ter | HMG | 46,XX | CD | F | 2 mo | [Shotelersuk et al., 2006] |
| 2 | c.451A>T | p.K151Ter | HMG | 46,XY | CD | {M} | 24 days | **This study** |
| 2 | c.583C>T | p.Q195Ter | | 46,XX | CD | F | NS | [Foster et al., 1994] |
| 2 | c.600delC | p.P200fs218* | | 46,XY | CD | F* [a] | Alive at 8 yrs | [Cost et al., 2009] |
| 2 | c.611delT | p.F204fs218* | | SRY $^{-}$ | CD | F | 2.5 mo | **This study** |
| 2 | c.694C>T | p.Gln232Ter | | 46,XX | CD | F | 11 days | **This study** |
| 3 | c.714_715insA | p.T239fs250* | | 46,XX | CD | F | 1 mo | [Gentilin et al., 2010] |
| 3 | c.737_738insC | p.Q246fs251* | | 46,XX | CD | F | Neonatal | [Cameron et al., 1996] |
| 3 | c.737_738insC | p.Q246fs251* | | 46,XY | CD | F* | Neonatal | [Cameron et al., 1996] |
| 3 | c.737_738insC | p.Q246fs251* | | 46,XY | CD | F* [b] | Neonatal | [Cameron et al., 1996] |
| 3 | c.771_772ins5 | p.G257fs296* | | 46,XY | CD | F* | Stillbirth [25 wks] | [Wada et al., 2009] |
| 3 | c.783_784insG | p.G263fs294* | | 46,XY | CD | F* | NS | [Foster et al., 1994] |
| 3 | c.783-788delG | p.G263fs277* | | SRY $^{-}$ | CD | F | 1 day | **This study** |

| *SOX9* – premature termination codon [continued] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 3 | c.788_808del21 ou c.789_809del21 | p.G263fs502* | | 46,XX | CD | F | Termination [16 wks] | [Gentilin et al., 2010] |
| 3 | c.820_829del10 | p.E277fs278* | | 46,XX | CD | F | 2.5 mo | [Meyer et al., 1997] |
| 3 | c.858_859ins4 | p.286fs294* | | 46,XY | CD | F* | NS | [Foster et al., 1994] |
| 3 | c.1070_1112del43 | p.Q357fs368* | PQA | 46,XY | CD | F* | 2 days | [Meyer et al., 1997] |
| 3 | c.1123C>T | p.Q375Ter | PQA | 46,XY | CD | F* | 7 wks | [Meyer et al., 1997] |
| 3 | c.1198G>T | p.E400Ter | | 46,XY | CD | M | 2.5 mo | [Meyer et al., 1997] |
| 3 | c.1201C>T | p.Q401Ter | | 46,XY | CD | F* | NS | [Stoeva et al., 2011] |
| 3 | c.1320C>G | p.Y440Ter | TA | 46,XY | CD | F* | NS [neonatal] | [Wagner et al., 1994] |
| 3 | c.1320C>G | p.Y440Ter | TA | 46,XX | CD | F | Alive at 11 yrs | [Meyer et al., 1997] |
| 3 | c.1320C>A | p.Y440Ter [d] | TA | 46,XY | CD | F* | 3 mo | [Pop et al., 2005] |
| 3 | c.1330_1333del4 | p.443fs468* | TA | 46,XX | CD | F | Alive at 11 yrs | [Wada et al., 2009] |
| 3 | c.1372delC | p.Q458Rfs468* | TA | 46,XY | CD | M | 4 mo | [Kim et al., 2011] |

| *SOX9* – C-terminal extensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 3 | c.888_889insC | p.P297fs577* | | 46,XX | CD | F | Alive at 6 yrs | [Okamoto et al., 2010] |
| 3 | c.984_985insG + c.1061_1069del9 | p.P328fs576* + p.P354_P356del3 | | 46,XY | CD | F* | NS [neonatal] | [Wagner et al., 1994] |
| 3 | c.1095G>AT | p.A365fs586* | PQA | 46,XY | CD | F* | 4 mo | [Hsiao et al., 2006] |
| 3 | c.1103_1104insA | p.Q368fs576* | PQA | 46,XY | CD | [M] | >1 day | [Kwok et al., 1995] |
| 3 | c.1103_1104insA | p.Q368fs576* | PQA | 46,XY | CD | F* | >1 day | [Kwok et al., 1995] |
| 3 | c.1216_1217ins16 | p.H406fs574* | TA | 46,XX | CD | F | Terminated [21 wks] | [Gentilin et al., 2010] |
| 3 | c.1456_1457insG | p.S484fs576* | TA | 46,XX | CD | F | 5 yrs | [Giordano et al., 2001] |
| 3 | c.1113_1114insG | p.E499fs576* | TA | 46,XY | CD | M | Terminated [23 wks] | [Gentilin et al., 2010] |
| 3 | c.1514_1515insC | p.T381fs576* | TA | 46,XY | ACD | F* [b] | Terminated [22 wks] | [Beaulieu et al. 2009] |

| *SOX9* – C-terminal extensions [continued] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 3 | c.1519_1520ins4 | p.T507fs558* | TA | 46,XX | CD | F | >1 day | [Kwok et al., 1995] |

| *SOX9* – missense mutations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 1 | c.227C>A | p.A76E | Dimer | 46,XY | CD | M | Alive at 6 yrs | [Sock et al., 2003] |
| 1 | c.316A>G | p.K106E | HMG | 46,XX | CD | F | Terminated [21 wks] | [Gentilin et al., 2010] |
| 1 | c.323C>T | p.P108L | HMG | 46,XY | CD | F* | 6 mo | [Meyer et al., 1997] |
| 1 | c.334T>C | p.F112L | HMG | 46,XY | CD | F* [c] | Few days | [Kwok et al., 1995] |
| 1 | c.335T>C | p.F112S | HMG | 46,XY | CD | [M]/ {M} | Alive at 8 yrs | [Meyer et al., 1997] |
| 1 | c.337A>G | p.M113V | HMG | 46,XX | ACD | F | Alive at 2 yrs | [Staffler et al., 2010] |
| 1 | c.338T>C | p.M113T | HMG | 46,XX | CD | F | 5 mo | [Wada et al., 2009] |
| 1 | c.356C>T | p.A119V | HMG | 46,XX | CD | F | 12 days | [Kwok et al., 1995] |
| 1 | c.427T>C | p.W143R | HMG | 46,XY | CD | F* | 5 mo | [Meyer et al., 1997] |
| 2 | c.455G>C | p.R152P | HMG | 46,XX | CD | F | 2 days | [Meyer et al., 1997] |
| 2 | c.455G>C | p.R152P | HMG | 46,XX | ACD | F | NS | [Friedrich et al., 2000] |
| 2 | c.462C>G | p.F154L | HMG | 46,XX | CD | F | 1 day | [Preiss et al., 2001] |
| 2 | c.472G>A | p.A158T | HMG | 46,XY | CD | F* | Alive at 19 yrs | [Preiss et al., 2001] |
| 2 | c.493C>T | p.H165Y | HMG | 46,XY | CD | M | Alive at 10 yrs | [McDowall et al., 1999] |
| 2 | c.493C>T | p.H165Y | HMG | 46,XY | ACD | M | Alive at 1.8 yrs | [Moog et al., 2001] |
| 2 | c.494A>C | p.H165P | HMG | 46,XY | CD | {M} | Terminated [20 wks] | [Tonni et al., 2013] |
| 2 | c.495C>G | p.H165Q | HMG | 46,XY | ACD | M | Alive at 8 yrs | [Staffler et al., 2010] |
| 2 | c.506A>C | p.H169P | HMG | NS | CD | | Terminated [2nd trim.] | [Massardier et al., 2008] |
| 2 | c.507C>G | p.H169Q | HMG | NS | CD/ SPS [e] | M | Alive at 10 yrs | [Matsushita et al., 2013] |
| 2 | c.509C>G | p.P170R | HMG | 46,XY | CD | M | 1 mo | [Meyer et al., 1997] |

| *SOX9* – missense mutations [continued] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 2 | c.509C>T | p.P170L | HMG | 46,XY | ACD | M | Alive at 11 yrs | [Sock et al., 2003] |
| 2 | c.509C>T | p.P170L | HMG | 46,X | ACD | F | Alive at 10.5 yrs | [Gentilin et al., 2010] |
| 2 | c.517A>G | p.K173E | HMG | 46,XY | ACD | [M] | Alive at 11 mo | [Thong et al., 2000] |
| 2 | c.527C>T | p.P176L | HMG | 46,XY | ACD | F* | Terminated [33 wks] | [Michel-Calemard et al., 2004] |
| 2 | c.527C>T | p.P176L | HMG | NS | ACD | M | NS | [Gopakumar et al., 2013] |

| *SOX9* – splice-site mutations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| | IVS1-2A>C | - | - | 46,XY | CD | F* | NS | [Kwok et al., 1995] |
| | IVS1-2A>G | - | - | 46,XX | CD | F | NS [neonatal] | **This study** |
| | IVS2+1G>A | - | - | 46,XY | CD | F* | NS [neonatal] | [Wagner et al., 1994] |

| *SOX9* – in-phase deletions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Exon** | **cDNA** | **Protein** | **Domain** | **Karyotype** | **Phenotype** | **Sex** | **Survival** | **Reference** |
| 1 | c.196_225del30 | p.E66_E75del10 | Dimer | 46,XX | CD | F | >1 day | [Sock et al., 2003] |
| 3 | c.1047_1130del84 | p.P301_P328del28 [d] | PQA | 46,XY | ACD | F* | Alive at 1.8 yrs | [Chen et al., 2012] |

[a]With dysgerminoma. [b]With true hermaphroditism. [c]Patient characterized as 'intersex'. [d]Mutation in homozygosis. [e]Mild CD/ small patella syndrome. M: male; [M]: male with hypospadias; {M}: male with small penis; M*: 46,XX sex reversal; F: female; F*: 46,XY, sex reversal, as proposed by Fonseca et al. [32]. ACD: acampomelic campomelic dysplasia; CD: campomelic dysplasia; Dimer: dimerization domain; HMG: high-mobility group DNA binding domain; NS: not specified; PQA: proline-glutamine-alanine-rich domain; TA: transactivation domain.

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