Variation of meiotic recombination rates and MLH1 foci distribution in spermatocytes of cattle, sheep and goats.

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**Online Resource 1** Individual frequencies of MLH1 foci, total length of SCs and crossover density in the studied species. (m=months, y=years).

| Species | Animal | Age | Breed | Number of autosomal MLH1 foci per cell (mean±SD) | Number of cells | Range of MLH1 foci numbers | Cells with MLH1 foci on the XY chromosmes (%) |
|---|---|---|---|---|---|---|---|
| Cattle | BTA I | 2y | Czech spotted cattle | 45.28±3.20 | 104 | 38-55 | 19.23 |
| | BTA II | 2y | Czech spotted cattle | 46.26±3.80 | 211 | 36-58 | 16.11 |
| | BTA III | 2y | Czech spotted cattle | 47.29±4.34 | 204 | 36-57 | 18.63 |
| | BTA IV | 2y | Czech spotted cattle | 50.26±3.86 | 201 | 40-60 | 15.92 |
| Sheep | OAR I | 6m | mixed breed | 58.19±5.26 | 108 | 46-70 | 37.96 |
| | OAR II | 6m | mixed breed | 58.38±4.80 | 111 | 45-73 | 43.24 |
| | OAR III | 6m | mixed breed | 59.65±4.47 | 111 | 48-69 | 45.95 |
| | OAR IV | 7m | Cameroon | 61.03±5.04 | 108 | 51-73 | 26.85 |
| | OAR V | 1y | Cameroon | 61.37±4.64 | 127 | 41-71 | 49.61 |
| | OAR VI | 1y | Cameroon | 62.56±5.29 | 102 | 49-78 | 32.35 |
| | OAR VII | 1y | Cameroon | 63.42±5.92 | 102 | 48-81 | 24.51 |
| | OAR VIII | 6m | mixed breed | 63.70±5.01 | 200 | 47-78 | 62.50 |
| | OAR IX | 7m | mixed breed | 65.60±4.71 | 107 | 52-77 | 45.79 |
| | OAR X | 6y | Cameroon | 67.27±4.81 | 117 | 54-78 | 11.97 |
| | OAR XI | 7m | mixed breed | 69.42±5.73 | 104 | 56-88 | 45.19 |
| Goat | CHI I | 5y | Pygmy goat | 58.05±4.51 | 106 | 46-71 | 11.32 |
| | CHI II | 9m | Pygmy goat | 59.37±4.68 | 102 | 46-74 | 20.59 |
| | CHI III | 10m | Pygmy goat | 59.42±4.55 | 113 | 50-70 | 21.24 |
| | CHI IV | 9m | Pygmy goat | 60.29±5.21 | 109 | 44-72 | 31.19 |
| | CHI V | 9m | Pygmy goat | 60.82±4.79 | 137 | 48-77 | 32.85 |
| | CHI VI | 9m | Pygmy goat | 60.89±4.83 | 107 | 48-71 | 27.10 |
| | CHI VII | 9m | Pygmy goat | 61.84±4.43 | 103 | 49-71 | 25.24 |
| | CHI VIII | 9m | Pygmy goat | 63.91±6.42 | 109 | 47-81 | 24.77 |
| Barbary sheep | ALE | 112 | - | 57.95±5.03 | 107 | 45-73 | 20.56 |

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**Online Resource 2** Differences in the distribution of MLH1 foci on the individual chromosomes BTA1, BTA2, BTA3, BTA5, BTA8 and BTA11 and their sheep orthologues ([a] P<0.05, [b] P<0.01, [c] P<0.001).

| | | 1 MLH foci | 2 MLH1 foci | | 3 MLH1 foci | | |
|---|---|---|---|---|---|---|---|
| | MLH1 position (Mean±SD) | 1st | 1st | 2nd | 1st | 2nd | 3rd |
| Chromosome 1 | Cattle | 0.40±0.24 | 0.25±0.12 | 0.79±0.13 | 0.16±0.08[c] | 0.53±0.12 | 0.88±0.10 |
| | Sheep | 0.49±0.39 | 0.28±0.12 | 0.82±0.13 | 0.20±0.11[c] | 0.52±0.14 | 0.88±0.09 |
| Chromosome 2 | Cattle | 0.84±0.17 | 0.26±0.15 | 0.82±0.26 | 0.16±0.07[a] | 0.49±0.11[a] | 0.84±0.12 |
| | Sheep | 0.92±0.00 | 0.27±0.15 | 0.76±0.15 | 0.19±0.09[a] | 0.53±0.12[a] | 0.88±0.12 |
| Chromosome 3 | Cattle | 0.48±0.19 | 0.30±0.14 | 0.78±0.14 | 0.15±0.08[b] | 0.51±0.13 | 0.85±0.12 |
| | Sheep | 0.39±0.15 | 0.33±0.14 | 0.80±0.14 | 0.21±0.12[b] | 0.54±0.11 | 0.89±0.09 |
| Chromosome 5 | Cattle | 0.66±0.32 | 0.24±0.12 | 0.79±0.15 | 0.19±0.10 | 0.54±0.13 | 0.88±0.09 |
| | Sheep | 0.61±0.01 | 0.27±0.12 | 0.78±0.15 | 0.17±0.08 | 0.54±0.13 | 0.87±0.09 |
| Chromosome 8 | Cattle | 0.52±0.24 | 0.24±0.13[b] | 0.81±0.12 | 0.17±0.08 | 0.47±0.12[c] | 0.88±0.09 |
| | Sheep | 0.47±0.26 | 0.31±0.14[b] | 0.84±0.14 | 0.19±0.09 | 0.59±0.09[c] | 0.89±0.07 |
| Chromosome 11 | Cattle | 0.51±0.16 | 0.23±0.13[a] | 0.75±0.13 | 0.16±0.08 | 0.48±0.12 | 0.86±0.09 |
| | Sheep | 0.67±0.03 | 0.31±0.14[a] | 0.78±0.10 | 0.20±0.11 | 0.53±0.14 | 0.87±0.08 |