

Additional file 1

Tables

Table S1 Sample size of cattle breeds under investigation. Overview of cattle breeds from Africa, Asia and Europe used in analyses and their corresponding sample size (n)

| Geographical origin | Breed | n | |
|---------------------|--------------------|----------------|----------------|
| Africa | Ankole | 7 | |
| | Baoule | 7 | |
| | Boran | 47* | |
| | Djakorre | 7 | |
| | Gourounsi | 3 | |
| | Kenana | 9 | |
| | N'Dama | 27* | |
| | Ogaden | 8 | |
| | Zebu Gobra | 7 | |
| | Zebu Maure | 4 | |
| | Asia | Achai | 2 |
| | | Bhagnari | 2 |
| | | Cholistani | 1 [§] |
| Dhanni | | 1 [§] | |
| Gabraali | | 1 [§] | |
| Gir | | 2 | |
| HisarHiryana | | 1 [§] | |
| Sahiwal | | 5 | |
| Tharparkar | | 2 | |
| Europe | | Angus | 5 |
| | Brown Swiss | 5 | |
| | Charolais | 4 | |
| | Eastern Finncattle | 5 | |
| | Hereford | 5 | |
| | Holstein | 82* | |
| | Jersey | 5 | |
| | Limousine | 4 | |
| | Scottish Highland | 2 | |
| | Simmental | 5 | |
| Western Finncattle | 5 | | |

* Breeds with a considerably higher sample size compared to the others were reduced to ten samples

[§] Samples described in Iqbal et al. [92] were considered as 'Pakistan population' (n = 4)

African breeds highlighted in bold had at least 7 samples and were considered for F_{ST} calculation

Table S2 Breeds and sample sizes in ancestral and test populations. Samples were grouped into ancestry and test populations based on Admixture ancestry estimations with $K = 3$ for two genomic cline approaches: (1) European *Bos taurus* and Asian *Bos indicus* samples as ancestral populations S1 and S0, respectively, and all African samples as test samples (“European taurine S1”) and (2) African *Bos taurus* and Asian *Bos indicus* samples as ancestral populations S1 and S0, respectively, and remaining African samples as test samples (“African taurine S1”).

| | “European taurine S1” | | “African taurine S1” | |
|--|-----------------------|----------------|----------------------|----------------|
| | Breed | n | Breed | N |
| Asian <i>Bos indicus</i> n = 16 (S0) | Achai | 2 | Achai | 2 |
| | Bhagnhari | 2 | Bhagnhari | 2 |
| | Cholistani | 1 | Cholistani | 1 |
| | Dhanni | 1 | Dhanni | 1 |
| | Gabraali | 1 | Gabraali | 1 |
| | Gir | 2 | Gir | 2 |
| | HisarHiryana | 1 | HisarHiryana | 1 |
| | Sahiwal | 4 ^a | Sahiwal | 4 ^a |
| | Tharparkar | 2 | Tharparkar | 2 |
| European <i>Bos taurus</i> n = 54 (S1) | Angus | 5 | NA | |
| | Brown Swiss | 5 | | |
| | Charolais | 3 ^b | | |
| | Eastern Finncattle | 5 | | |
| | Hereford | 5 | | |
| | Holstein | 10 | | |
| | Jersey | 5 | | |
| | Limousine | 4 | | |
| | Scottish Highland | 2 | | |
| Simmental | 5 | | | |
| Western Finncattle | 5 | | | |
| African <i>Bos taurus</i> n = 14 (S1) | NA | | Baoule | 6 |
| | | | Gourounsi | 1 |
| | | | N'dama | 7 |
| African test samples n = 71 (approach 1) n = 57 (approach 2) | Ankole | 7 | Ankole | 7 |
| | Baoule | 7 | Baoule* | 1 |
| | Boran | 10 | Boran | 10 |
| | Djakorre | 7 | Djakorre | 7 |
| | Gourounsi | 3 | Gourounsi* | 2 |
| | Kenana | 9 | Kenana | 9 |
| | N'dama | 10 | N'dama* | 3 |
| | Ogaden | 8 | Ogaden | 8 |
| | Zebu Gobra | 7 | Zebu Gobra | 7 |
| | Zebu Maure | 3 ^c | Zebu Maure | 3 ^c |

^a One Sahiwal sample removed from subsequent analyses due to < 0.99 proportion of indicine ancestry

^b One Charolais sample removed from subsequent analyses due to < 0.99 proportion of European taurine ancestry

^c One Zebu Maure sample from Table 1 was removed due to high taurine ancestry (~80% proportions of taurine ancestry whereas “zebu” are expected to have high indicine ancestry)

* Breeds with samples included in both S1 and test populations