Supplementary Table S1 Posture and behavioural activities items recorded in the video analysis1.

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| Traits2 | ATOL ref3 | Description of the measurement |
| Posture | ATOL:0000370 | position of the limbs or carriage of the body |
|  Lying | ATOL:0000837 | body in contact with the ground or substrate, maintaining a lateral or ventral position |
|  Standing | ATOL:0000835 | upright position on extended legs |
|  Sitting | ATOL:0000836 | posterior of the body trunk in contact with the ground and supports most of the body weight |
| Behavioural activity |  |  |
|  Immobility  |  | body with lack of motor activity in standing or sitting, except eye, ears or small head movements  |
|  Resting  |  | body with lack motor activity in lying down, except eye, ears or small head movements  |
|  Feeding | ATOL:0000363 | presence at the feeder with access door to feed opened  |
|  Drinking | ATOL:0000361 | presence at the drinker with head above or within the water bowl |
|  Investigation | ATOL:0000844 | investigation expressed by motor activities such as sniffing, licking, scratching, rooting acts, performed on physical or social substrate |
|  Pen  | ATOL:0000845 | investigation of the pen  |
|  Social | ATOL:0000846 | investigation of a conspecific  |
|  Novel objet4 |  | investigation of the unfamiliar objects introduced during the motivation test |
|  Agonistic5  | ATOL:0000902 | social interaction encompassing the actions of both the instigator and the receptor, in the ESF area or in the other part of the pen  |
|  Mobility  |  | standing and moving from place to place, head up |
|  Other  |  | any behavioural activity other than the activities traits described above |

1 Video recordings were carried out at 17 wks (24h-analysis) and 18 wks of age (motivation test, 9 hours). A 5-min instantaneous scan sampling technique was utilized.

2 each pig was scored for category of traits: posture and behavioural activity. Within each category traits were mutually exclusive.
3 traits adapted from reference to the ontology ATOL: <http://www.atol-ontology.com/index.php/en/>

4 Investigation towards the two unfamiliar objects introduced during 9 hours within the pen at 18 wk of age during the motivation test

5 The agonistic interactions wereinitially recorded by distinguishing the ESF area and the other part of the pen, but both were combined due to low number of interactions whatever the location.