South Australian **Museum**

EVOLUTIONARY BIOLOGY UNIT
Genetic Monitoring Service

Genetic monitoring of inbred rats as supplied by the University of Adelaide's Laboratory Animal Services - June, 2015

Laboratory rats representing the DA inbred strain were provided for assessments of their genetic authenticity using the molecular genetic technique of allozyme electrophoresis (see Adams *et al*. (1990a) for a detailed description of the technique). A set of standard genetic markers known to display allelic variation amongst inbred and outbred strains was screened for the two animals supplied. The results of these genetic analyses are shown in Table 1.

Table 1. Allelic profiles at 15 genetic markers for the two DA animals. Although not formally described, the markers AHD-K and AP-R both exhibit genetically-determined variation, involving two co-dominant allozymes, s ("slow" mobility) and f ("fast" mobility). Nomenclature for allelic profiles according to Adams *et al*. (1990b). The strain profile expected for the DA group of substrains is also shown italicized for reference.

Strain	*Acon-1*	*Ahd-2*	*Ahd-C*	*Akp-1*	*Alp-1*	*Br-1*	*Es-2*	*Es-4*	*Es-10*	*Fh*	*Hbb*	*Pep-3*	*Pk*	*AHD-K*	*AP-R*
DA reference	***b***	***b***	***b***	***b***	***a***	***a***	***a***	***b***	***a***	***b***	***b***	***b***	***b***	***s***	***s***
DA (yellow 81 ♂)	b	b	b	b	a	a	a	b	a	b	b	b	b	s	s
DA (silver 78 ♂)	b	b	b	b	a	a	a	b	a	b	b	b	b	s	s

Conclusions and comments

1. There is no evidence of genetic variability in the DA inbred strain. Both individual tested were homozygous at all genetic markers examined.

2. There is no evidence of genetic contamination in this strain. The allelic profiles obtained are consistent with previous screens (last screened June, 2014; report M459) and with the published literature.

Contact details

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References

Adams M, van Zutphen B, den Bieman M, and Reetz IC (1990a). "Biochemical techniques" pp. 115-128 in *Genetic Monitoring of Inbred Strains of Rats.* Hedrich HJ (ed.). Gustav Fisher Verlag, Stuttgart.

Adams, M *et al*. (1990b). "Laboratory protocols for detecting biochemical markers" pp. 129-139 in *Genetic Monitoring of Inbred Strains of Rats*. Hedrich HJ (ed.). Gustav Fisher Verlag, Stuttgart.