**Table 1.**

| | GG | GT | TT |
|---|---|---|---|
| AA | 3 | 4 | 9 |
| AT | 2 | 6 | 0 |
| TT | 6 | 0 | 0 |

**Table 2.**

| Site 218 | Site 243 | Frequency |
|---|---|---|
| T | A | 0·4 |
| G | T | 0·4 |
| G | A | 0·2 |
| T | T | 0 |

*Chromosome location:* The location of the canine gene is unknown; the corresponding human gene maps to 17q21 (Law *et al.* 1986), or to 17q11.1-q12 (Xu *et al.* 1988).

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*References*

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## A polymorphism in intron D of the chinook salmon growth hormone 2 gene

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*Source/description:* Locus-specific primers were developed using published gene and cDNA sequences of growth hormone 1 and growth hormone 2 from *Salmo salar, Oncorhynchus mykiss,* and *Oncorhynchus keta* (Agellon & Chen 1988; Agellon *et al.* 1988; Johansen *et al.* 1989; Sekine *et al.* 1989).

*Primer sequences:*

Forward primer (GH2ex-4): 5'-CAG CCT AAT GGT CAG AAA CT-3'
Reverse primer (GH2ex-5a): 5'-CGT AGT TCC TCC TGA CGT TG-3'
Expected product size: approximately 1300 base pairs.

*PCR/RFLP conditions:* 30 µl reactions consisting of: 0·2–0·5 µg total genomic DNA; 0·1 µM each primer; 0·2 µM dNTPs; 3 mM $MgCl_2$; 50 mM KCl; 10 mM Tris-HCl; 0·1% Triton; 0·3 U Taq polymerase. Amplification was performed using a profile of 1 min at 94°C, 2 min at 52°C, and 1 min at 72°C for 40 cycles, with a final extension of 10 min at 72°C. Restrictions were performed according to manufacturer's instructions and the resulting fragments were separated by electrophoresis on a 1·5% agarose gel, and visualized using ethidium bromide and UV light.

*Polymorphism:* RFLPs were detected in DNA samples from four populations of chinook salmon in the Columbia River basin (northwestern USA) using the endonuclease *Dra*I. Allele *A* contains two *Dra*I sites, which yield fragments of approximately 550, 520, and 230 bp. Allele *B* contains only a single *Dra*I site and yields two fragments of approximately 1070 and 230 bp. Restriction with the enzymes *Bam*HI, *Eco*RI, *Pst*I, and *Hae*III revealed no polymorphisms. Restriction with the enzyme *Bsr*GI revealed a polymorphism linked to the *Dra*I polymorphism and, therefore, yielded no additional information.

*Mendelian inheritance:* Segregation of the alleles was examined in two heterozygote–homozygote crosses. A sample of 15 offspring of undetermined sex from each of the two crosses (see Fig. 1 and Table 1) showed codominant segregation of the two alleles. No significant departures from expected values were observed ($\chi^2 = 0{\cdot}6$ for each cross), although the power of the test was limited by the small sample size.

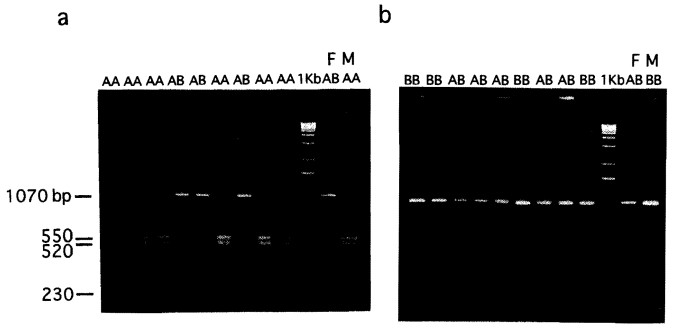


**Fig. 1.** Growth hormone 2 intron D cut with *Dra*I; nine chinook salmon progeny and parents (parents are last two lanes on gel). (a) *AB* female × *AA* male; (b) *AB* female × *BB* male.

**Table 1.** Genotype frequencies for the growth hormone 2, intron D polymorphism in offspring of two separate crosses of chinook salmon from Abernathy Hatchery, WA, USA

| | Offspring | | | |
|---|---|---|---|---|
| Female × Male | *AA* | *AB* | *BB* | Total |
| *AB* × *AA* | 6 | 9 | 0 | 15 |
| *AB* × *BB* | 0 | 6 | 9 | 15 |

*Allele frequency:* The frequencies of RFLPs were determined in a total of 68 individuals from four populations in the Columbia River drainage (Table 2).

**Table 2.** Frequency of growth hormone 2, intron D *Dra*I polymorphism in four populations of chinook salmon from the Columbia River drainage (northwestern USA)

| | Genotype frequency | | | | Allele frequency | |
|---|---|---|---|---|---|---|
| Location | *AA* | *AB* | *BB* | Total | *A* | *B* |
| Lostine River, OR | 15 | 5 | 0 | 20 | 0·88 | 0·12 |
| Minam River, OR | 17 | 3 | 0 | 20 | 0·93 | 0·07 |
| Carson Hatchery, WA | 10 | 4 | 0 | 14 | 0·86 | 0·14 |
| Abernathy Hatchery, WA | 8 | 5 | 1 | 14 | 0·75 | 0·25 |

*Chromosomal location:* Unknown, autosomal.

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