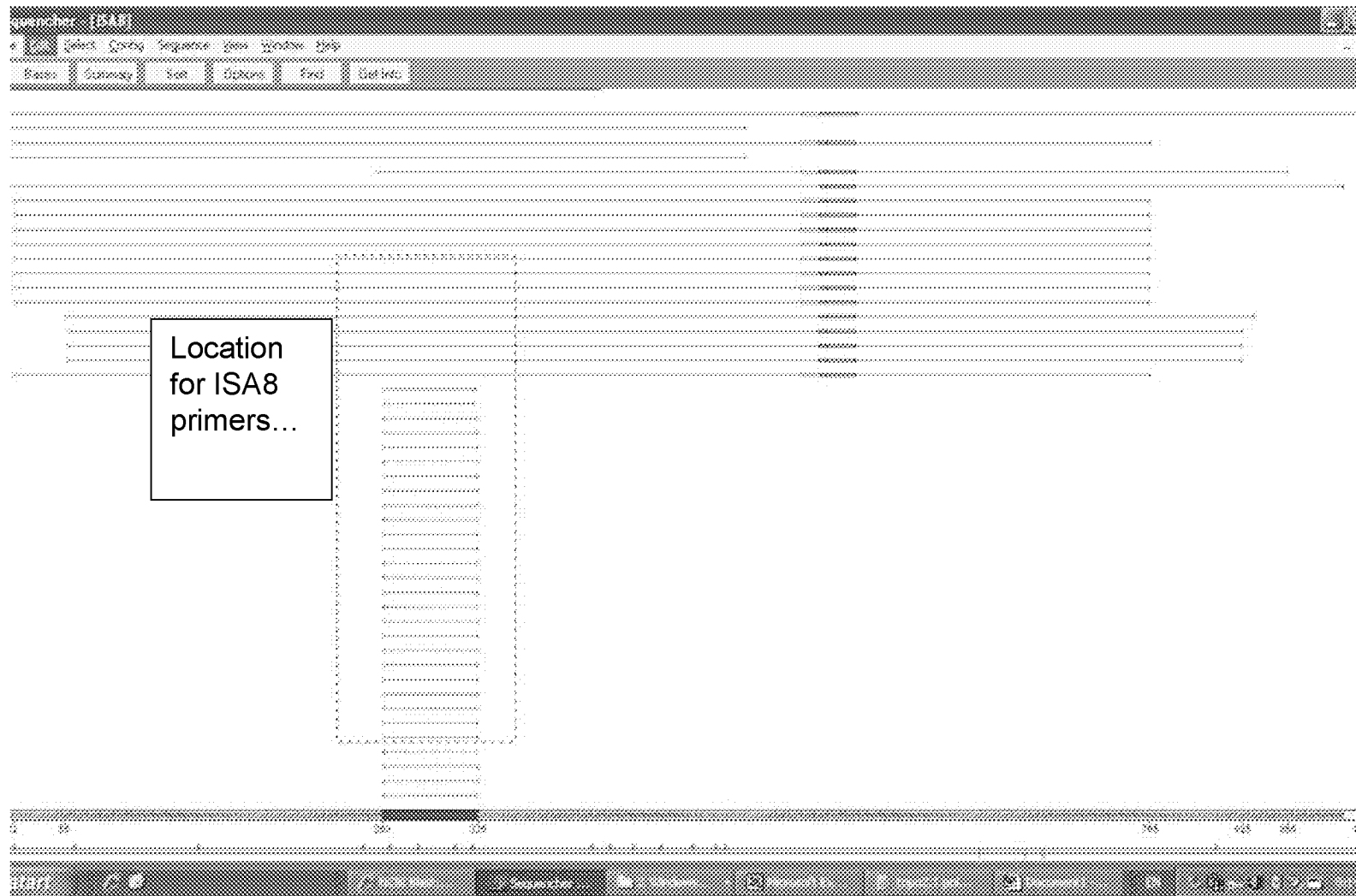


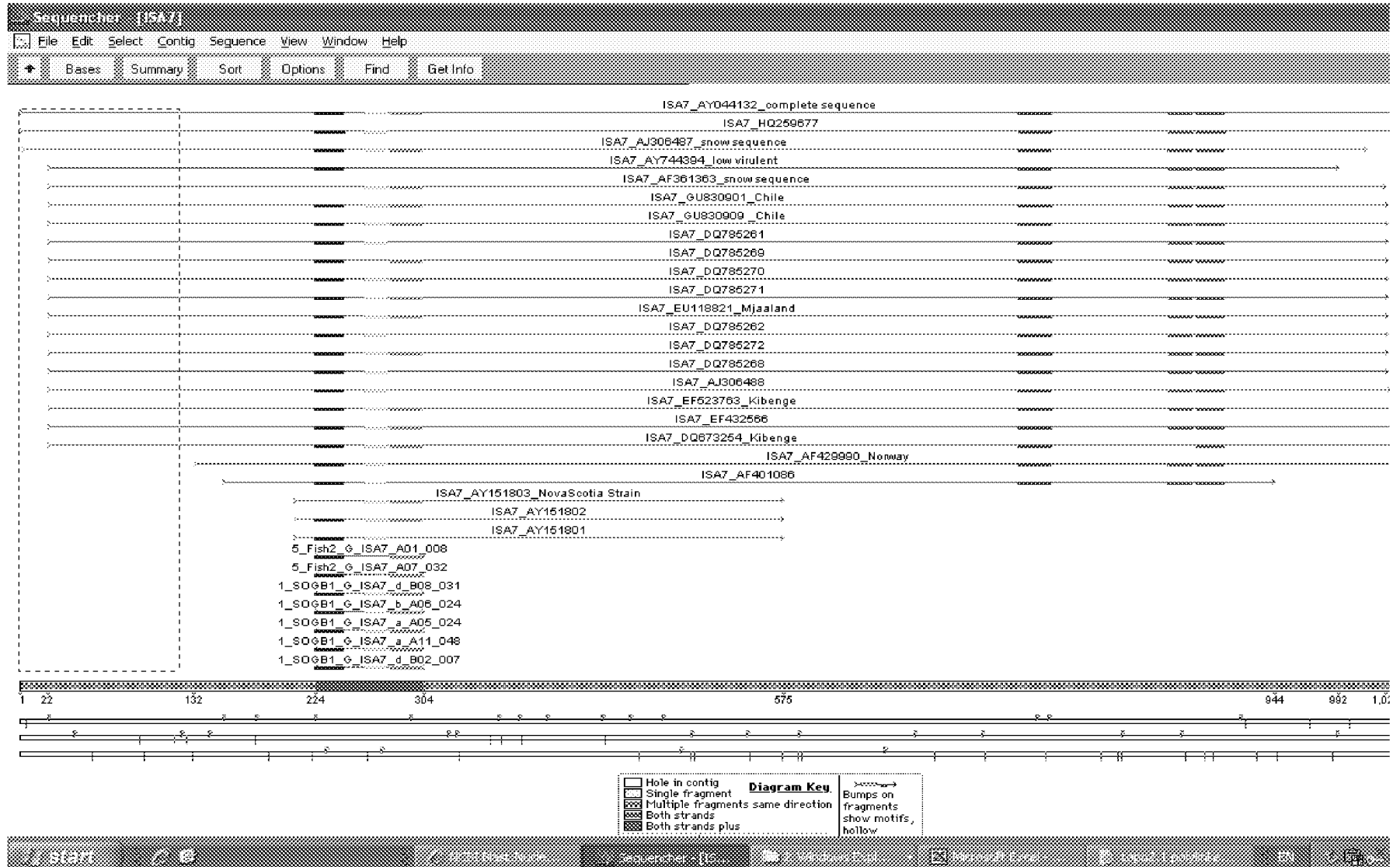
Presentation to Fish Health Group on status of molecular screening for Orthomyxoviruses performed by the Molecular Genetics Laboratory Nov 24, 2011

Present: Kristi Miller, Karia Kaukinen, Mark Saunders, Mark Higgins, Stewart Johnstone, Kyle Garver

ISA8 quantitative RT-PCR (taqman) screened in wild sockeye salmon populations using published Plarre primers. Products have now been sequenced and align with ISA sequence variants



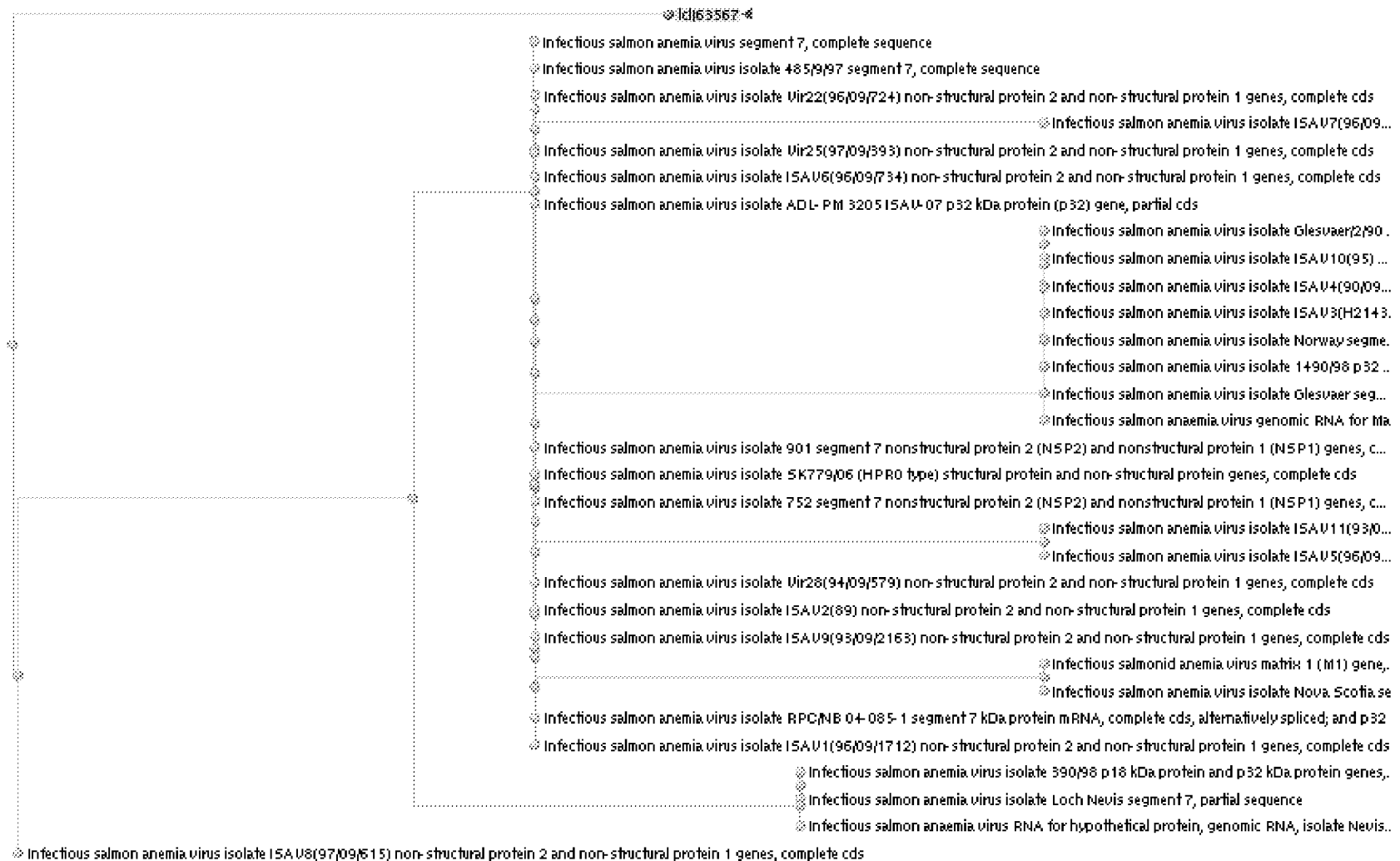
ISA7 quantitative RT-PCR (taqman) screened in wild sockeye salmon populations using published Plarre primers. Products have now been sequenced and align with ISA sequence variants



Top hit to ISA7 95% similar

<u>Accession</u>	<u>Description</u>	<u>Max score</u>	<u>Total score</u>	<u>Query coverage</u>	<u>E value</u>	<u>Max Identity</u>
<u>HQ011268.1</u>	Infectious salmon anemia virus isolate ADL-PM 3205 ISAV-07 p32 kDa protein (p32) gene, partial cds	<u>128</u>	128	100%	4e-27	95%
<u>GU830909.1</u>	Infectious salmon anemia virus isolate 901 segment 7 nonstructural protein 2 (NSP2) and nonstructural protein 1 (NSP1) genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>GU830901.1</u>	Infectious salmon anemia virus isolate 752 segment 7 nonstructural protein 2 (NSP2) and nonstructural protein 1 (NSP1) genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>EU118821.1</u>	Infectious salmon anemia virus isolate SK779/06 (HPR0 type) structural protein and non-structural protein genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785272.1</u>	Infectious salmon anemia virus isolate Vir22(96/09/724) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785271.1</u>	Infectious salmon anemia virus isolate Vir28(94/09/579) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785270.1</u>	Infectious salmon anemia virus isolate Vir25(97/09/393) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785267.1</u>	Infectious salmon anemia virus isolate ISAV9(93/09/2163) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785264.1</u>	Infectious salmon anemia virus isolate ISAV6(96/09/734) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785260.1</u>	Infectious salmon anemia virus isolate ISAV2(89) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ785259.1</u>	Infectious salmon anemia virus isolate ISAV1(96/09/1712) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>EF432566.1</u>	Infectious salmon anemia virus isolate RPC/NB 04-085-1 segment 7 kDa protein mRNA, complete cds, alternatively spliced; and p32 kDa protein mRNA, complete cds	<u>128</u>	128	100%	4e-27	95%
<u>DQ673254.1</u>	Infectious salmon anemia virus isolate 485/9/97 segment 7, complete sequence	<u>128</u>	128	100%	4e-27	95%
<u>AY044132.1</u>	Infectious salmon anemia virus segment 7, complete sequence	<u>128</u>	128	100%	4e-27	95%
<u>HQ259677.1</u>	Infectious salmon anemia virus isolate Glesvaer/2/90 segment 7, complete sequence	<u>122</u>	122	100%	2e-25	93%
<u>EF523763.1</u>	Infectious salmon anemia virus isolate 390/98 p18 kDa protein and p32 kDa protein genes, complete cds	<u>122</u>	122	100%	2e-25	93%
<u>DQ785269.1</u>	Infectious salmon anemia virus isolate ISAV11(93/09/2264) non-structural protein 2 and non-structural protein 1 genes, complete cds	<u>122</u>	122	100%	2e-25	93%

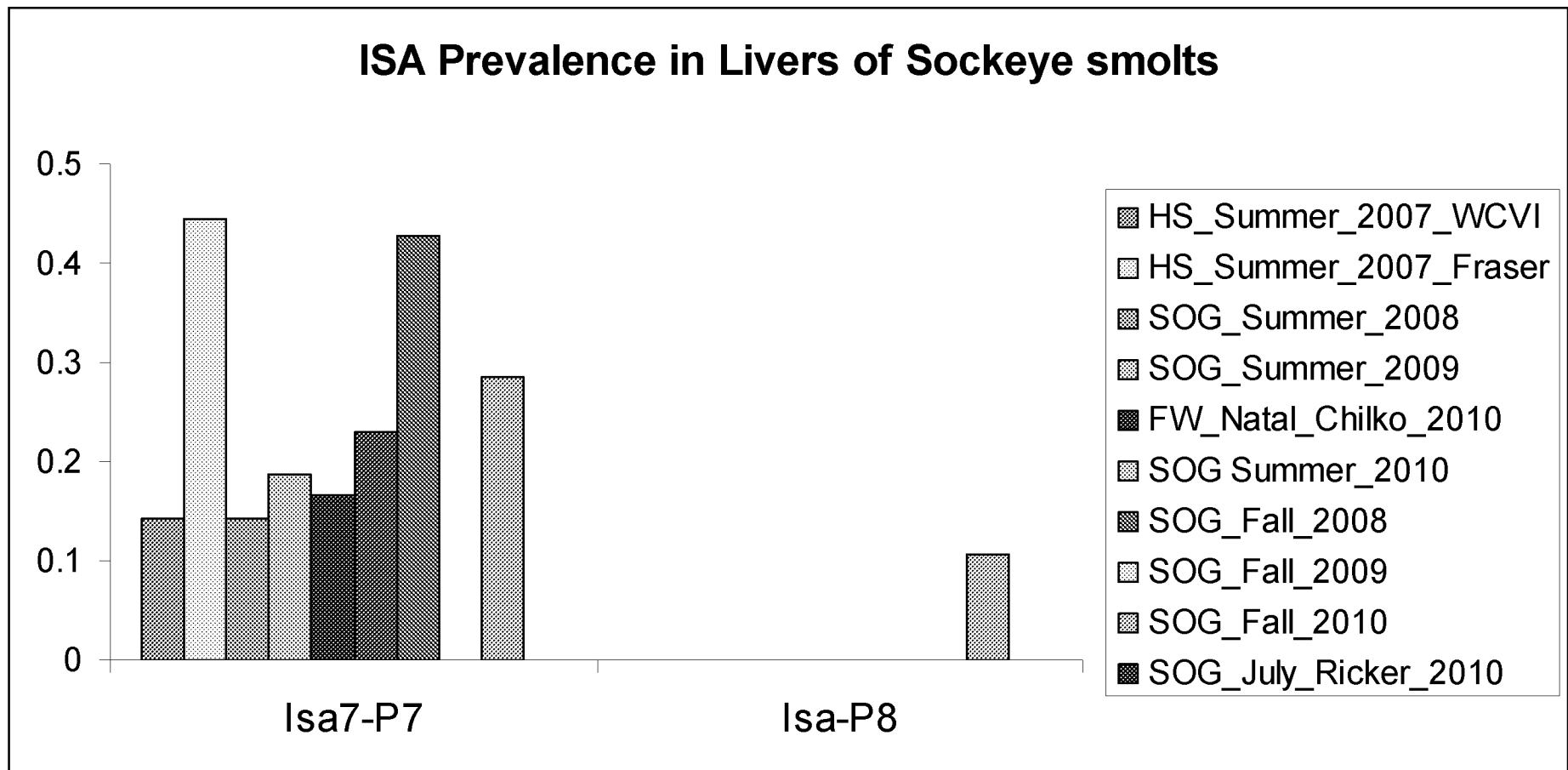
Tree showing sockeye ISAV7 sequence (yellow) relative to other ISAV isolates



Alignment of ISA7 showing three fixed differences and highlighting that the two North American strains also show a fixed difference that differentiates them both from the sockeye isolate and European strains

63567	1	TGGGATCATGTGTTTCCTGCTACCCGG-G-CGACGAACCTGACGAGGGGCCATGTGAACTTGCATCTGAGAACATGGATTTTC	81	
HQ011268	224	.....-G.-.A.....T.....	304	E-Ch
GU830909	203	.....-G.-.A.....T.....	283	E-Ch
GU830901	203	.....-G.-.A.....T.....	283	E-Ch
EU118821	203	.....-G.-.A.....T.....	283	E-Nhpr0
DQ785272	203	.....-G.-.A.....T.....	283	E-N
DQ785271	203	.....-G.-.A.....T.....	283	E-N
DQ785270	203	.....-G.-.A.....T.....	283	E-N
DQ785267	203	.....-G.-.A.....T.....	283	E-N
DQ785264	203	.....-G.-.A.....T.....	283	E-N
DQ785260	203	.....-G.-.A.....T.....	283	E-N
DQ785259	203	.....-G.-.A.....T.....	283	E-N
EF432566	203	.....-G.-.A.....T.....	283	E-Ca
DQ673254	203	.....-G.-.A.....T.....	283	E-N
AY044132	224	.....-G.-.A.....T.....	304	Bremnes
HQ259677	224	.....-G.-.A.....T.....C....	304	N-Glesv
EF523763	203	.....-TG.-.A.....T.....	283	E-UK
DQ785269	203	.....-G.-.A.....T....C.....	283	E-N
DQ785268	203	.....-G.-.A.....T.....C....	283	E-N
DQ785266	203	.....-A.A.....T.....	283	E-N
DQ785265	203	.....-G.-.A.....C.....T.....	283	E-N
DQ785263	203	.....-G.-.A.....T....C.....	283	E-N
DQ785262	203	.....-G.-.A.....T.....C....	283	E-N
DQ785261	203	.....-G.-.A.....T.....C....	283	E-N
AF429990	93	.....-G.-.A.....T.....C....	173	E-N
AF361363	203	.....T.....-G.-.A.....T.....	283	NA-NS
AF401086	71	.....-G.-.A.....T.....C....	151	E-UK
AY151803	18	.....T.....-G.-.A.....T.....	98	NA-NS
AY151802	18	.....-TG.-.A.....T.....	98	E-UK
AY151801	18	.....-G.-.A.....T.....C....	98	E-N
AJ306488	203	.....-G.-.A.....T.....C....	283	N-Glesv
AJ306487	222	.....-TG.-.A.....T.....	302	E-UK

Screened 171 Livers over Four Years
Overall Prevalence 21% Isa7, 2% Isa8



Screened 414 Gills over Four Years

Overall Prevalence 10% Isa7, 3% Isa8

