

Monotreme, Bird and Reptile Protamine P1 Sequences (Human P1 is shown for comparison)

Human (<i>Homo Sapien</i>)	* * * * * A R Y R C C R S Q S R S R Y Y R Q R Q R S R R R R R S C Q - - - - T R R R A M R C C R P R Y R P R C - - - - - R R H - - - -
Monotremes	
Duckbill platypus (<i>Ornithorhynchus anatinus</i>) Short-beaked echidna (<i>Tachyglossus aculeatus</i>)	* * * * * A R F R R S R S R S R S L Y R R R R R S - - - - R R G G R Q T - - R S R K L S R - S R R R G R S R R R K G R R S R R S S R R S R R R N - - - - - A R F R P S R S R S R S L Y R R R R R S R R Q R S R R R G G R Q T - - G P R K I T R R G R G R G K S R R R R G R R S M R S S R R R R R R R R N - - - - -
Birds	
Chicken (<i>Gallus gallus</i>) Japanese quail (<i>Coturnix japonica</i>)	* * * * * A R Y R R S R T R S R S P R S R R R R R R S G R R R S P R R R R Y G S A R R S R R S V G G - - - - R R R R Y G S R R R R R - - - - - R R Y A R Y R R T R T R S R S R R R R R S R R R R - - - - - S S R R R R Y G R S R R S Y R S V G R - - - - - R R R R Y G R R R R R R - - - - - R R Y
Reptiles	
Western painted turtle (<i>Chrysemys picta bellii</i>) Painted turtle (<i>Chrysemys picta</i>) Tt II1 Painted turtle (<i>Chrysemys picta</i>) Tt II-2 Painted turtle (<i>Chrysemys picta</i>) Tt II3 Painted turtle (<i>Chrysemys picta</i>) Tt II-4 Painted turtle (<i>Chrysemys picta</i>) Tt II5 American alligator (<i>Alligator mississippiensis</i>) Al-1 American alligator (<i>Alligator mississippiensis</i>) Al-2 American alligator (<i>Alligator mississippiensis</i>) Al-3 Japanese toad (<i>Bufo japonicus</i>) Japanese toad (<i>Bufo japonicus</i>) Japanese fire-bellied newt (<i>Cynops pyrrhogaster</i>) Japanese fire-bellied newt (<i>Cynops pyrrhogaster</i>) Green anole, American chameleon (<i>Anolis carolinensis</i>)	* * * * * A R Y R R N R S R S R S R R R R R R R G G R G G R R G R R R - - - - - R - R H - - - - - G Q R R R G R R G R E R T R R R R R R R R S S - - - - - - R R R R R R R G G R G G R R G R R R - - - - - R - R H - - - - - G R R R R G R R S R E Q T R R R R R R R R R - - - - - - - R R R R R R R G G R G G R R G R R R - - - - - R - R H - - - - - G R R R R G H R G R E R T R R R R R R R R S S - - - - - - - R R R R R R R G G R G G R R G R R R - - - - - R - R H - - - - - G R R R R G R R G R E R T R R R R R R R R S S - - - - - - - R R R R R R R G G R G G R S G R R R - - - - - R - R H - - - - - G R R R R G R R S R E Q T G R R R R R R R R R M S F - - - - - R R R R R R R G G R G G R R G R R R - - - - - R - R H - - - - - G R R R R G R R S R E R T G R R R R R R R R R M S F A R Y E R N R S R S R S R R - R R R W S N H G G R Y R R R R - - - - - T - R R S G G G R Y G Q R R H H R G S R R R R R R R R R - - - A R Y R H N R S R S R S R H R R R R R G H R G G R Y R R R - - - - - - - - - - - - R R R G R Y G H R R H H R G H S R R R R K R R R S R H - - - - - - - - - - R R R - R R R G G H G G G S Y R - P P - P P - M A R G R S R S R S V R R R R R G G S P R R R R R A G R - A Y G R A R S R G R S V R R R R R G R S P - R R R R R R R G R G H G G G K R R R G R -

Supplemental Figure S2. Amino acid sequences of monotreme, bird and reptile protamine P1. The sequences have been aligned relative to human protamine P1, and the epitopic sequences recognized by the new anti-protamine MAbs are highlighted to identify those protamines that are likely to be recognized. The epitopes recognized by 2A11, 5A2, 5D1, and 11C1 are highlighted in blue (SRS), gray (RQR), purple (TRR) and brown (RCC). The sequences recognized by MAb 20D4 are highlighted green (ARY) and yellow (RSCRRRRRSC, RSRRRRRRCR, and conserved variants). The YRP sequence recognized by MAb 26B11 is highlighted red. The protamines of the monotremes, birds and several reptiles for which we have sequences should be recognized by MAbs 2A11, 5A2, 5D1, and 11C1. MAb 20B4 would be expected to bind to protamines of birds and a number of reptiles.