**Table ST3**

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|  | **center nucleotides**  **(ACAC)** | **terminal nucleotides**  **(ACAC)** | **center nucleotides**  **(AUAU)** | **terminal nucleotides**  **(AUAU)** |
| **bRNaseA** | His119 (-10.9, A;  -4.0, C)  Thr45 (-4.6, C)  Phe120 (-4.5, C)  Val43 (-4.4, C)  Lys7 (-4.1, A)  Lys66 (-4.1, C)  Asn44 (-3.4, C) | Pro42 (-4.3, A)  Val43 (-3.0, A)  Lys7 (-3.3, C) | His119 (-14.5, A)  Phe120 (-5.1, U)  Val43 (-4.7, U)  Lys7 (-3.5, A)  Lys41 (-3.4,U)  Thr45 (-3.3, U) | Pro42 (-3.9, A)  Val43 (-3.3, A) |
| **hRNase1** | His119 (-11.3, A;  -3.7, C)  Arg4 (-4.6, A)  Lys66 (-4.5, C)  Thr45 (-4.5, C)  Val43 (-4.1, C)  Phe120 (-4.1, C) | Pro42 (-4.4, A)  Val43 (-3.2, A) | His119 (-11.6, A;  -3.5, U)  Lys66 (-4.8, U)  Phe120 (-4.5,U)  Arg4 (-3.9, A)  Val43 (-3.9, U)  Lys7 (-3.7, A)  Asn71 (-3.7, A)  Thr45 (-3.4, U)  Asn44 (-3.0, U) | Pro42 (-4.5, A)  Val43 (-3.2, A)  Lys7 (-3.6 ,U) |
| **hRNase2** | His130 (-11.5, A)  Lys39 (-7.5, C;  -4.3, A)  Gln41 (-5.3, C)  Thr43 (-4.3, C)  Asn42 (-3.7, C)  Arg69 (-3.0, A) | Arg133 (-4.3, A) | His130 (-10.0, A)  Lys39 (-5.9, U; -4.7 A)  Gln41 (-4.9, U)  Leu131 (-3.8, U)  Trp8 (-3.4, A)  Arg133 (-3.1, U)  Thr43 (-3.1, U) | Arg133 (-3.8, A)  Arg37 (-3.2, U)  Gln41 (-3.0, A) |
| **hRNase3** | His129 (-11.0, A;  -3.2, C)  Lys39 (-5.2, C;  -4.1, A) | Arg2 (-7.8, C)  Met1 (-6.7, C)  Gln41 (-3.2, A)  Arg35 (-3.2, C) | His129 (-11.8, A;  -3.8, U)  Leu130 (-5.4, U)  Lys39 (-4.7,U) | Met1 (-6.5, U)  Thr133 (-3.7, A)  Gln41 (-3.7, A)  Arg2 (-3.1, U) |
| **hRNase4** | His117 (-15.4, A;  -7.0, C)  Phe118 (-6.0, C)  Lys41 (-5.7, C)  Arg8 (-3.9, A)  Lys66 (-3.4, C)  Thr45 (-3.1, C) | Phe 43 (-5.6, A) | His117 (-12.3, A; -3.6, U)  Phe118 (-6.2, U)  Phe43 (-4.4, U)  Lys41 (-3.9, U)  Arg8 (-3.8, A)  Thr45 (-3.6, U) | Phe43 (-6.3, A)  Arg8 (-4.4, U)  Arg42 (-3.5, A) |
| **hRNase5** | His114 (-14.4, A;  -4.6, C)  Lys40 (-5.8, C)  Gln117 (-5.2, C)  Leu115 (-4.0, C)  Thr44 (-3.8, C)  Arg121 (-3.2, C) | Arg5 (-6.6, C)  His8 (-3.4, C) | His114 (-11.7, A; -3.2, U)  Lys40 (-5.3, U) | Arg5 (-7.2, U) |
| **hRNase6** | His123 (-9.8, A;  -5.4, C)  Lys8 (-6.2, A)  Lys39 (-5.5, C)  Leu124 (-5.3, C)  Trp11 (-4.0, A)  Asn69 (-3.4, A)  His16 (-3.2, C)  Arg67 (-3.2, A)  Asn65 (-3.0, A)  Gln15 (-3.0, C) | Arg5 (-4.8, C)  Lys8 (-4.6, C)  Gln41 (-4.1, A) | His123 (-11.5, A;  -5.2, U)  Lys64 (-5.0, U)  Lue124 (-4.6, U)  Asn69 (-3.7, A)  Asn65 (-3.6, A)  Arg67 (-3.3, A) | Arg67 (-3.9, U)  Lys8 (-3.5, U)  Gln41 (-3.5, A) |
| **hRNase7** | His124 (-7.9, A)  Thr43 (-4.2, C)  Lys39 (-4.0, C)  Asn42 (-3.8, C)  Leu41 (-3.8, C) | Leu41 (-5.7, A)  Arg37 (-3.9, C)  Met1 (-3.4, C) | His124 (-4.2, A) | Met1 (-3.2, U) |

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| **hRNase7** | His124 (-9.2, A;  -4.0, C)  Lys39 (-5.5, C)  Thr43 (-4.4, C)  Leu125 (-4.2, C)  Leu41 (-3.5, C)  Asn42 (-3.2, C) | Met1 (-4.6, C)  Leu41 (-4.7, A)  Arg37 (-3.6, C)  Lys2 (-3.9, C) | His124 (-7.3, A;  -3.8, U)  Met1 (-4.7, A)  Lys64 (-3.9, U)  Lys39 (-3.7, U)  Leu125 (-3.2, U) | Trp11 (-4.0,U)  Met1 (-4.0, U)  Leu41 (-3.5, A) |