**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) |