**S1 File:** **Candidate RNAi proteins in *S. carteri* and *X. testudinaria*.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***S. carteri* (Sca)** | | | | | | | | | | |
| **Protein annotation** | **Length** | **Key protein domains present (InterProScan)** | | | | | **Reverse BLAST to Swiss-Prot, top hit** | | |  |
| **Paz** | **Piwi** | **RNase III** | **dsRBD** | **MTase** | **Annotated function** | **Organism** | **e value** | **Inferred function** |
| scaffold2419 | 378 |  |  | 2 |  |  | Dicer-1 | Bos taurus | 1.10E-53 | Dicer |
| scaffold4677 | 630 | 1 | 1 |  |  |  | Argonaute-3 | Mus musculus | 0 | Argonaute |
| scaffold5722 | 356 |  |  | 2 |  |  | Drosha | Homo sapiens | 2.72E-86 | Drosha |
| scaffold52675 | 346 |  |  | 2 |  |  | Dicer-1 | Bos taurus | 5.14E-46 | Dicer |
| scaffold91188 | 174 |  |  |  | 1 |  | Pasha | Homo sapiens | 6.64E-20 | Pasha |
| scaffold133811 | 787 | 1 | 1 |  |  |  | Piwi-like-2 | Homo sapiens | 4.34E-151 | Piwi |
| ***X. tetsudinaria* (Xte)** | | | | | | | | | | |
| **Protein annotation** | **Length** | **Key protein domains present (InterProScan)** | | | | | **Reverse BLAST to Swiss-Prot, top hit** | | |  |
| **Paz** | **Piwi** | **RNase III** | **dsRBD** | **MTase** | **Annotated function** | **Organism** | **e value** | **Inferred function** |
| scaffold478 | 922 | 1 | 1 |  |  |  | Argonaute-2 | Rattus norvegicus | 0 | Argonaute |
| scaffold3139 | 294 |  |  |  |  | 1 | HEN1 | Xenopus tropicalis | 1.33E-43 | HEN1 |
| scaffold5083 | 775 |  |  | 2 |  |  | Drosha | Homo sapiens | 3.24E-124 | Drosha |
| scaffold5822-0.32 | 1587 |  |  | 2 |  |  | Dicer-1 | Bos taurus | 7.87E-143 | Dicer |
| scaffold5822-0.33 | 1754 |  |  | 2 |  |  | Dicer-like-2a | Oryza sativa | 2.97E-94 | Dicer |
| scaffold6407 | 639 | 1 | 1 |  |  |  | Piwi-like-1 | Gallus gallus | 5.23E-175 | Piwi |

# Protein sequences

## Argonautes

>Sca\_Ago1\_scaffold4677

LDFLCEVLELGNVDEQRRPLSDSQRVKFAKEIKGLKVEVTHAGPIKRKYRVCNVTRRPASAQTFPLTMESGDTYDCSVVQYFKEKHKLELCYPHLPCLQVGQEKKHTYLPLEVCNLVPGQRCIKKLSENQTSKMIKATSRTAPDREREINRLVARANFNEDPYVQDFGIAIDQKMVTVTGRILPPPLLQYGGKARVQAQPEKGVWDMRGKQFHKGVEIHSWTMVLFAAYRQCPEDKLRHFIYQLRRISSDAGMPITKDPFFLRYVSGVDTVEPIFRQLKQDRPELQLIMVVLPGKTPVYAEVKRVGDTLLGVATQCVQVRNVLRPSPQTLSNLCLKINVKLGGINSILVPGIRPAVFQSPVIFMGADVTHPPAGDERKPSIAALVASMDAHPSRYSATVRIQQHRQEIISELASMVREMLIHFYKSTRFKPHRIIFYRDGVSEGQFQQVLQHELRSVREACMKLEDGYEPGITFIVVQKRHHTRLFCSDAKDMIGRSGNIPAGTTVDVGITHPTEFDFYLCSHAGVQGTSRPSHYHVLWDDNDFTADELQCLTYQLCHTYVRCTRSVSYPAPAYYAHLVAFRARYHLQEREDKSSGDGSSASLQSEERSPAAMAQAVRVHEEINKVMYFA

>Xte\_Ago1\_scaffold478

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## Piwi

>Sca\_Piwi\_scaffold133811

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>Xte\_Piwi\_scaffold6407

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## Dicer

>Sca\_Dcr\_scaffold2419

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>Sca\_Dcr\_scaffold52675

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>Xte\_Dcr\_scaffold5822-0.32

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>Xte\_Dcr\_scaffold5822-0.33

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## Drosha

>Sca\_Drosha\_scaffold5722

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>Xte\_Drosha\_scaffold5083

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## Pasha

>Sca\_Pasha\_scaffold91188

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## HEN1

>Xte\_Hen1\_scaffold3139

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