



高粱AGO1蛋白的结构与功能分析

Structural and functional analysis of AGO1 in *sorghum bicolor*

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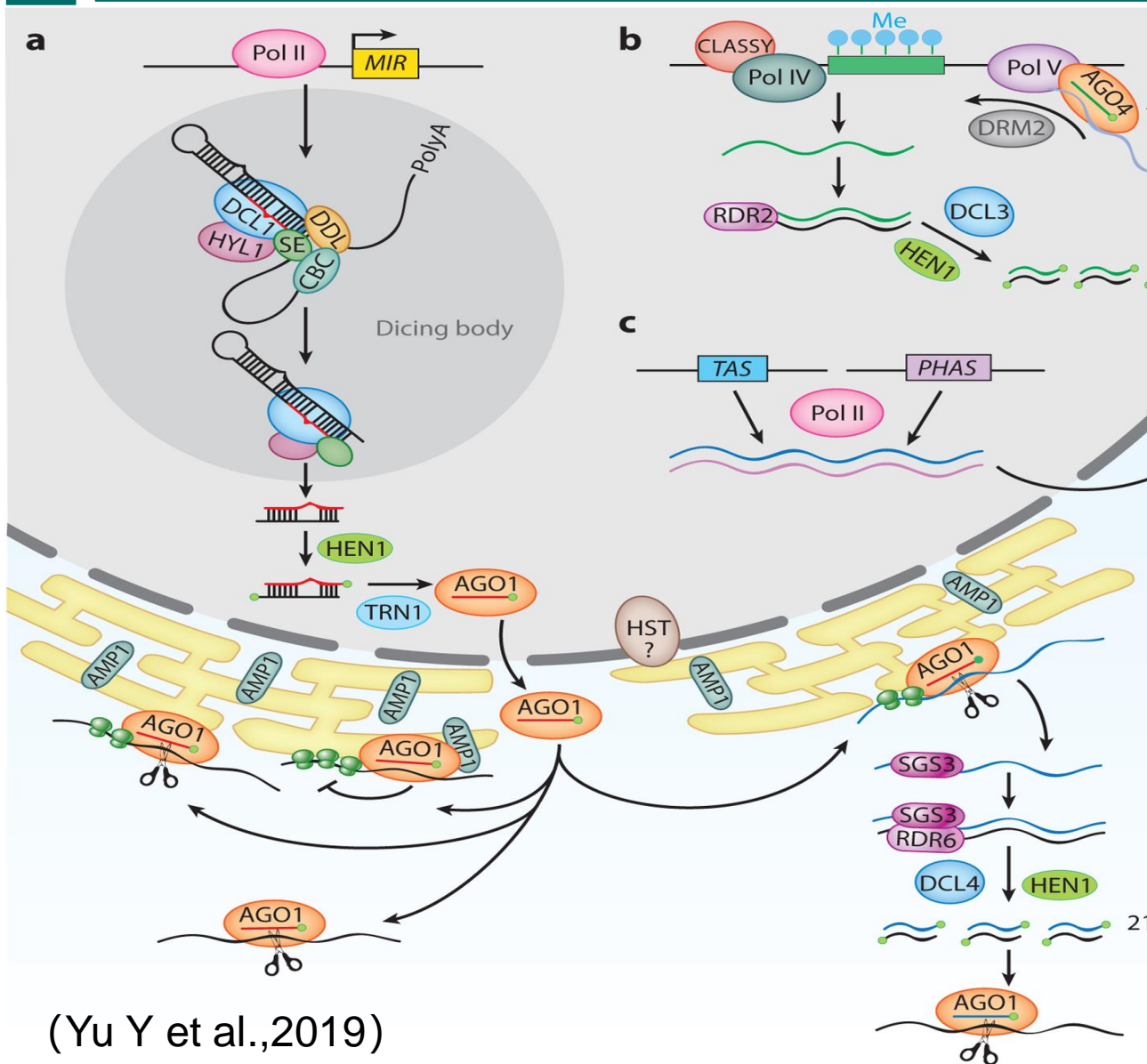
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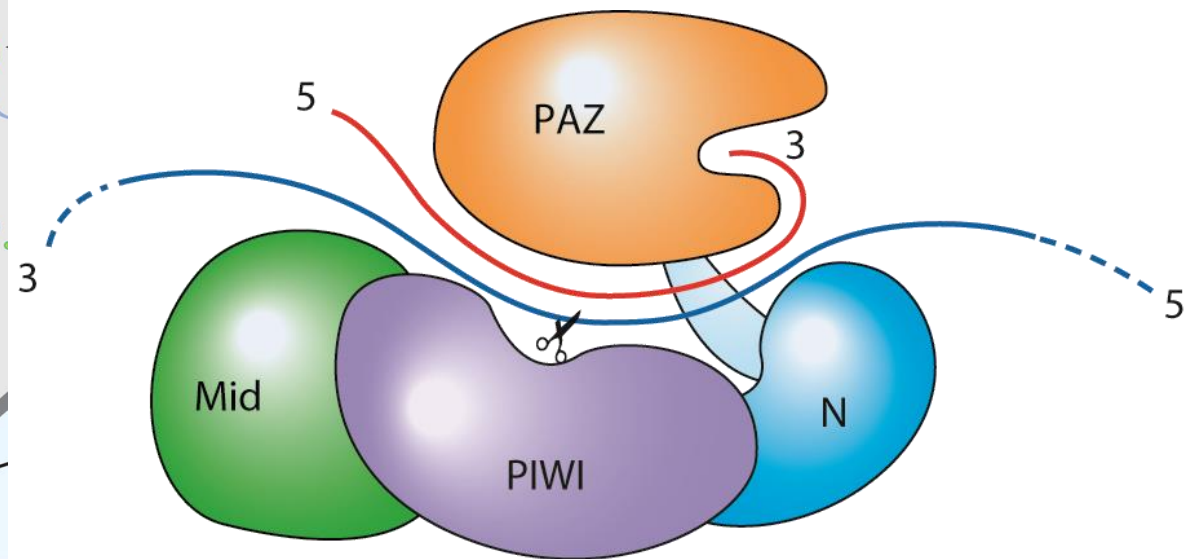
01

Part one

研究背景



(Yu Y et al., 2019)



AGOs可以调节植物的生长发育。

AGOs可以在胁迫条件下调控植物的耐受能力。

AGOs可以影响基因结构的完整性，并行使病毒防御功能。



AGO1可以控制转录后基因沉默。

AGO1参与sRNA和siRNA介导的基因沉默

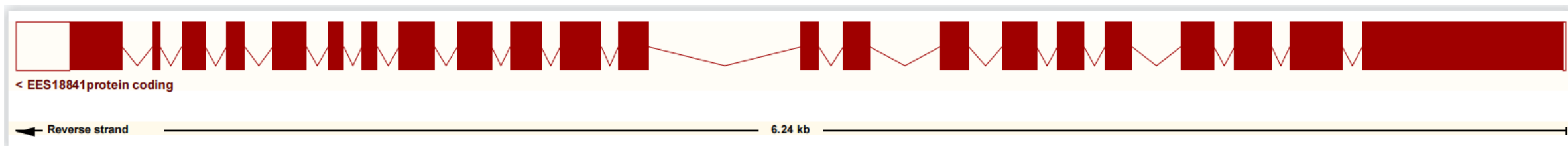
AGO1突变会引起许多发育异常表型。

02

Part two

高粱AGO1的结构与功能分析

高粱AGO1基本信息



高粱AGO1基本信息

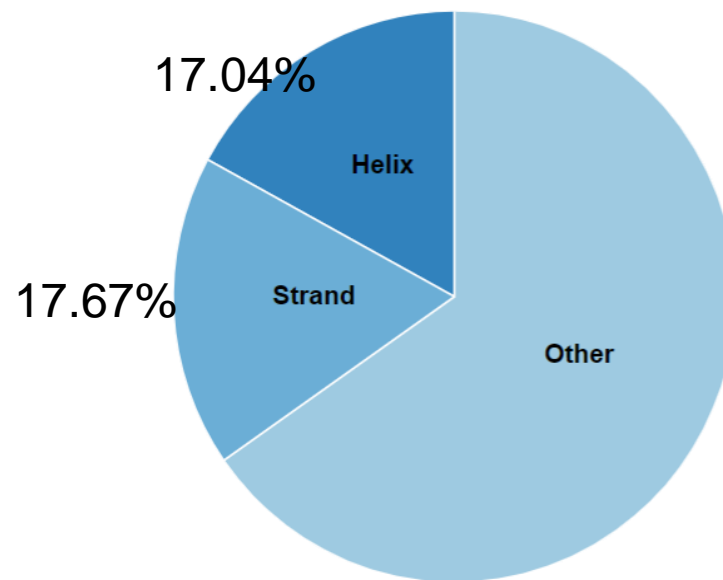


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蛋白	Ser丝氨酸	Thr苏氨酸	Tyr酪氨酸	带负电的氨基酸	带正点的氨基酸
AGO1	77	53	39	98	136

蛋白	Mw	pI	不稳定系数
AGO1	122109.21	9.57	50.23

Secondary Structure Composition



▼ Secondary Structure (RePROF)

Other
Helix
Strand



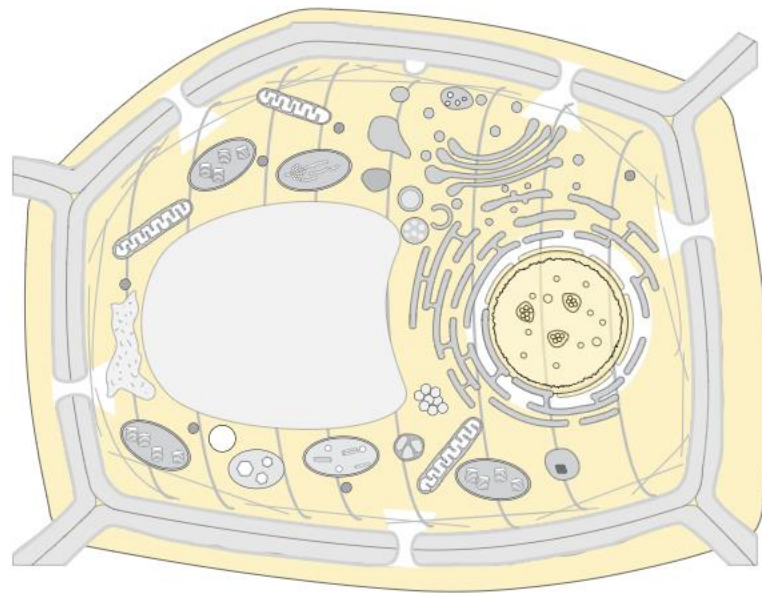
高粱AGO1蛋白的亚细胞定位



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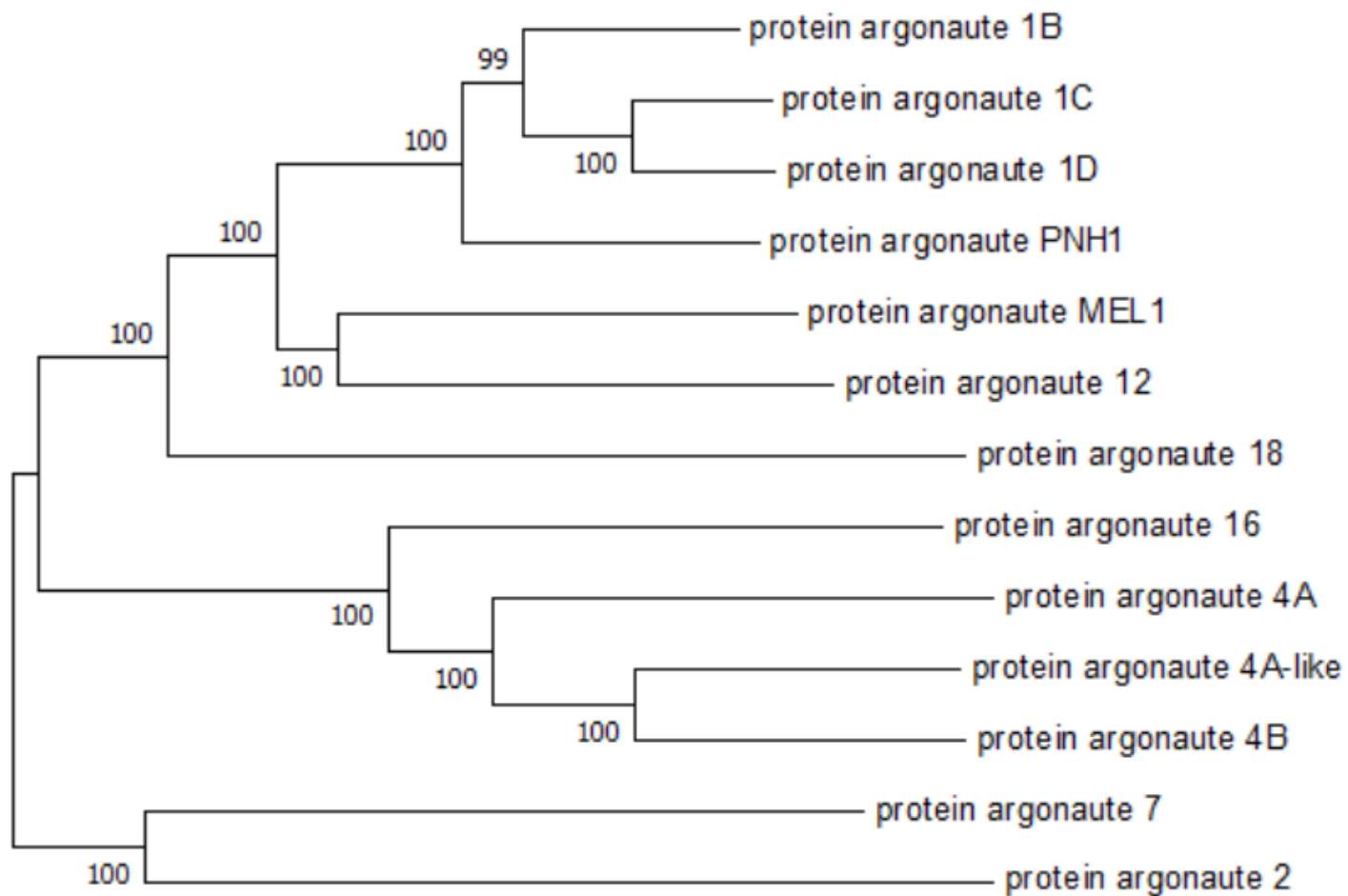


高粱 (PredictProtein)



拟南芥 (Uniprot)

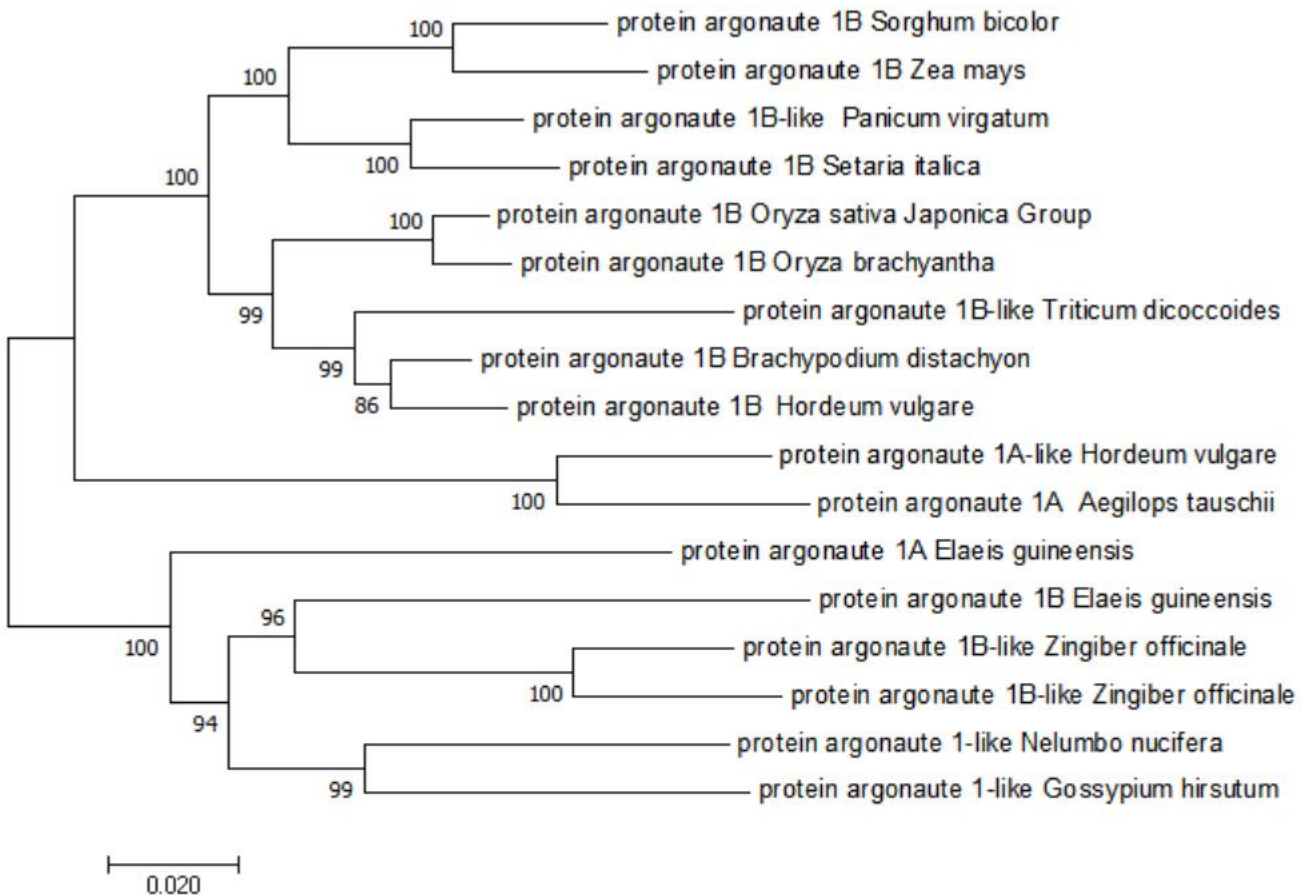
高粱中AGO蛋白家族



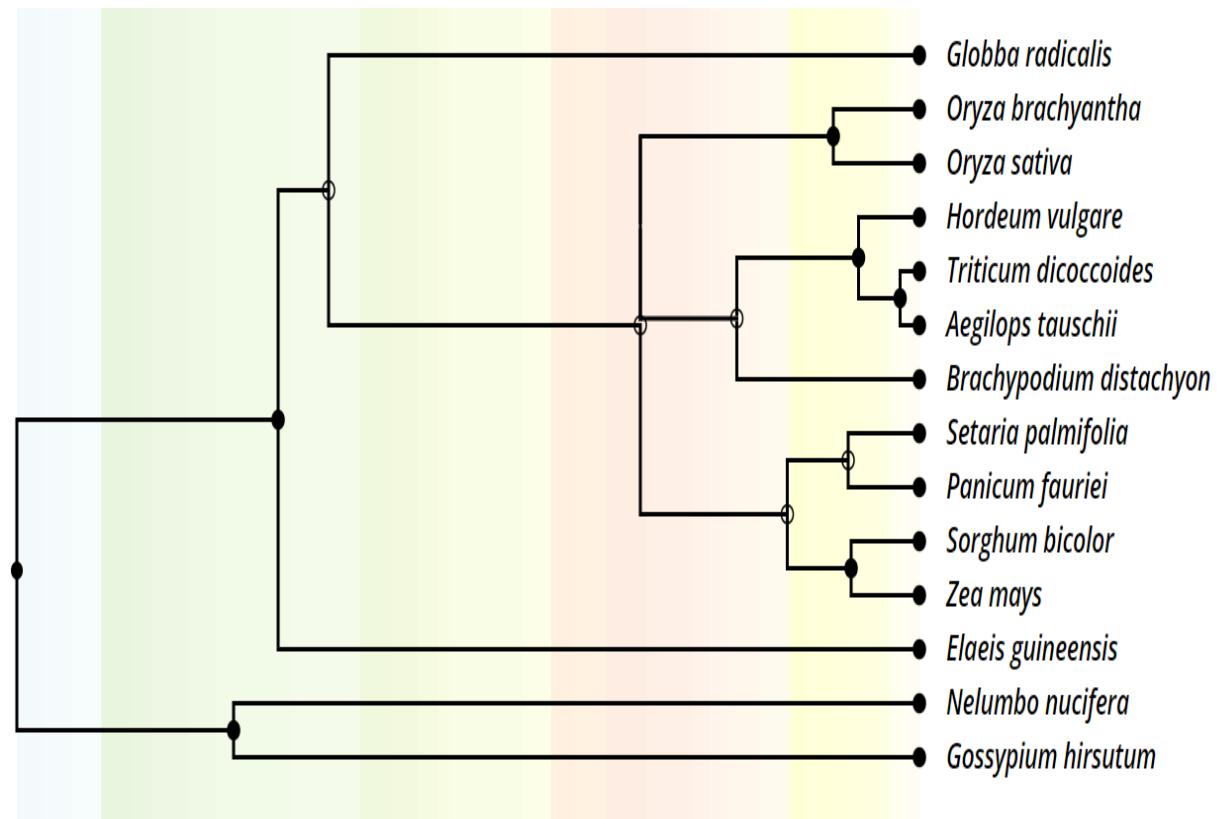
不同物种AGO1进化树构建



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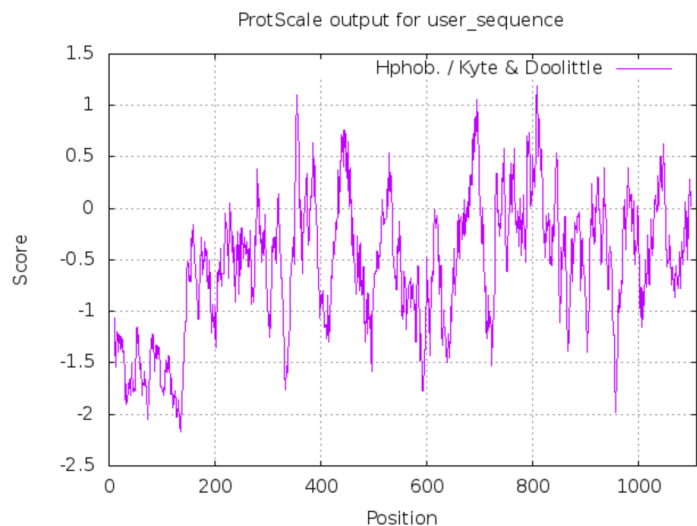


基因树

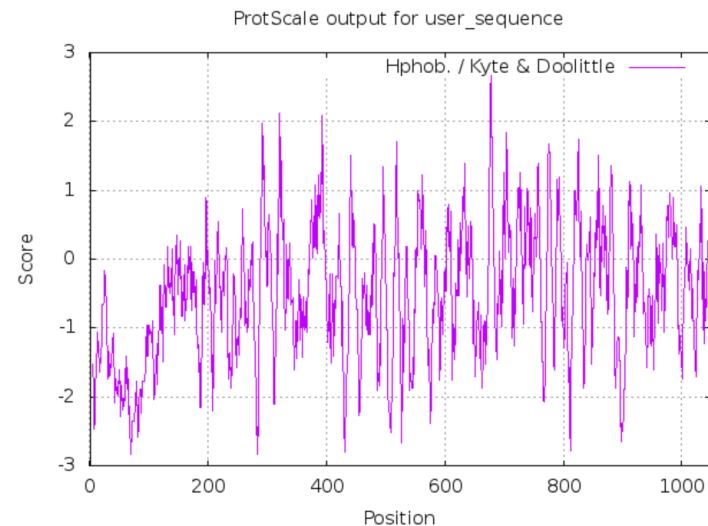


物种树

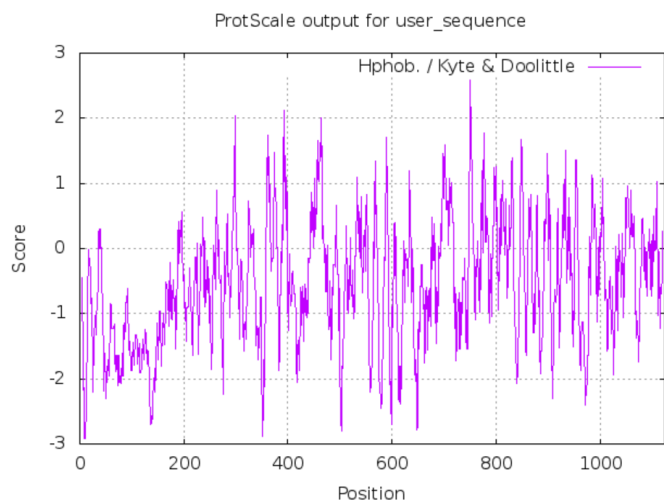
AGO1基本信息



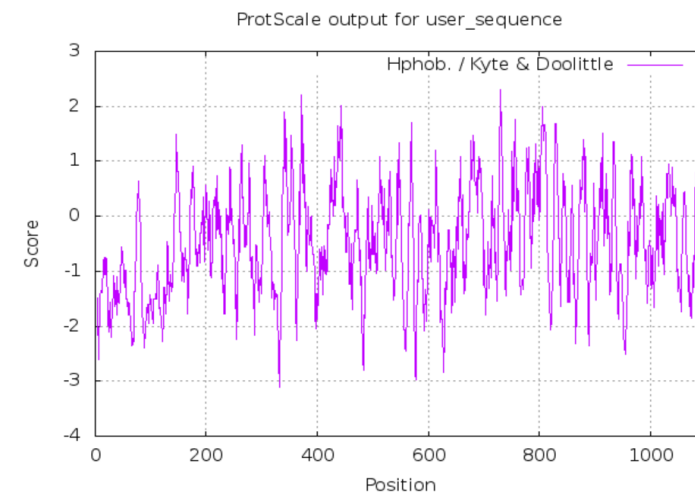
高粱



拟南芥

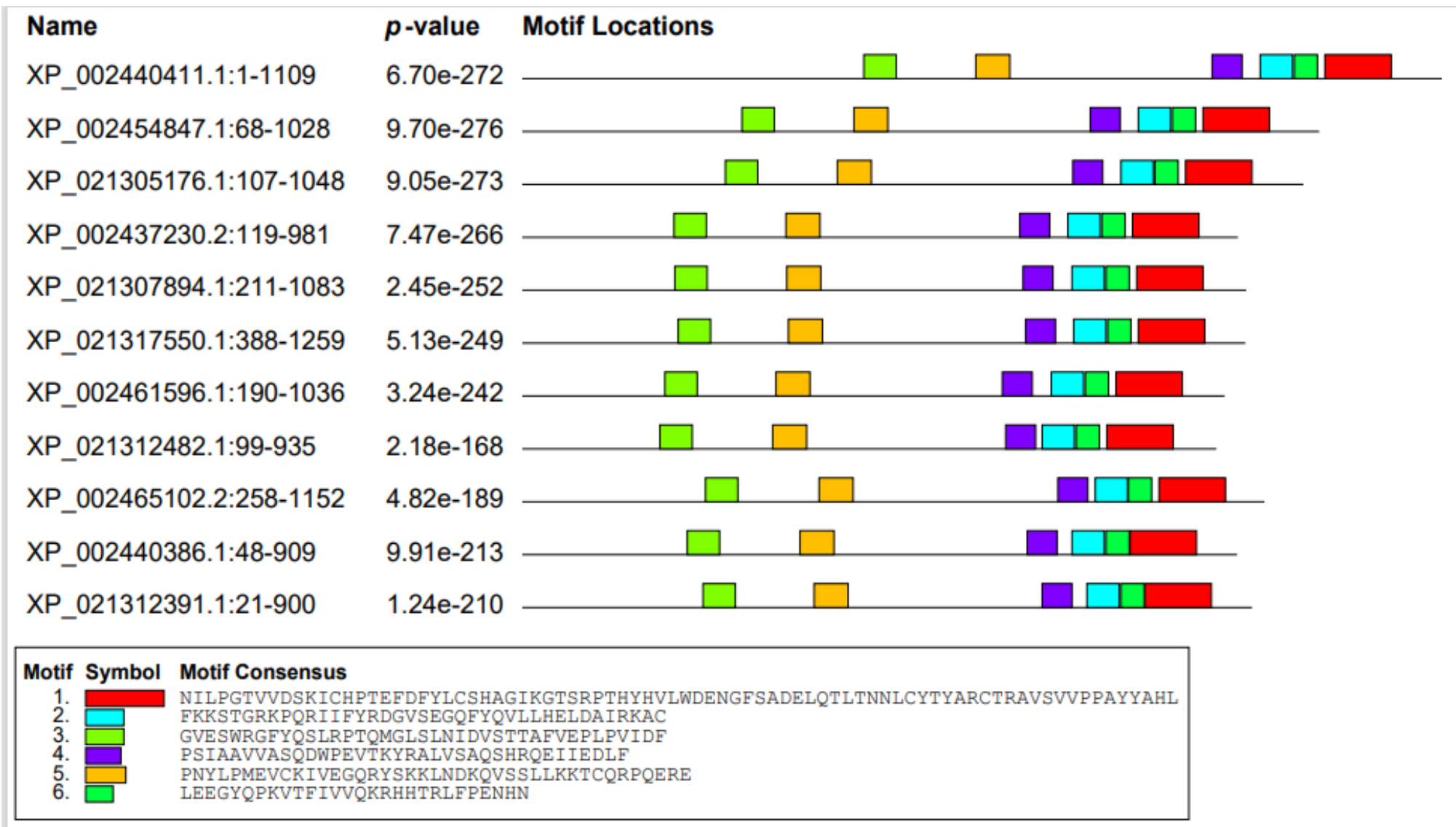


水稻



玉米

高粱AGO蛋白的结构域分析

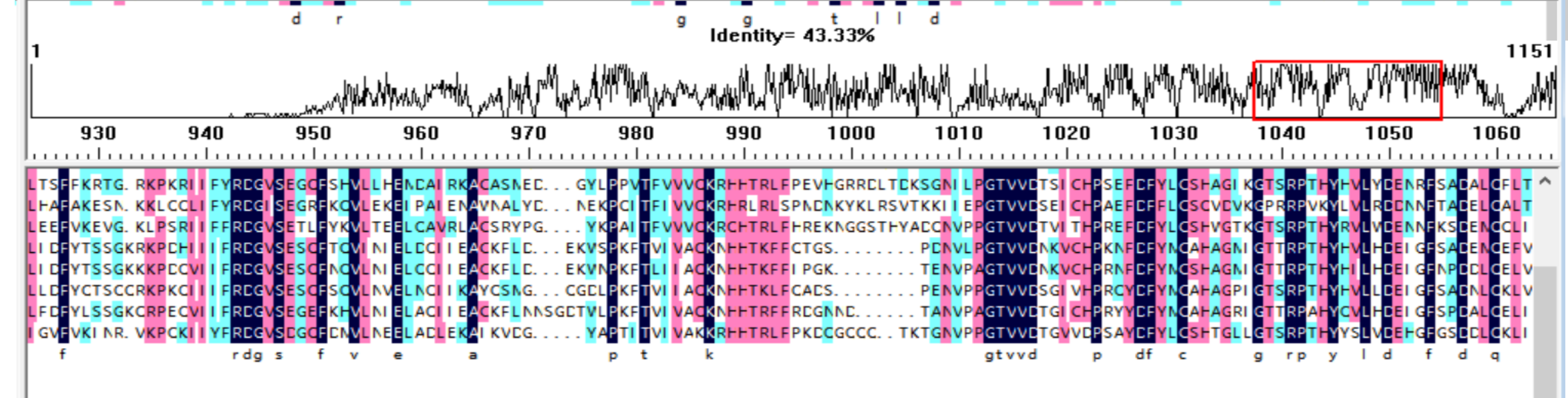
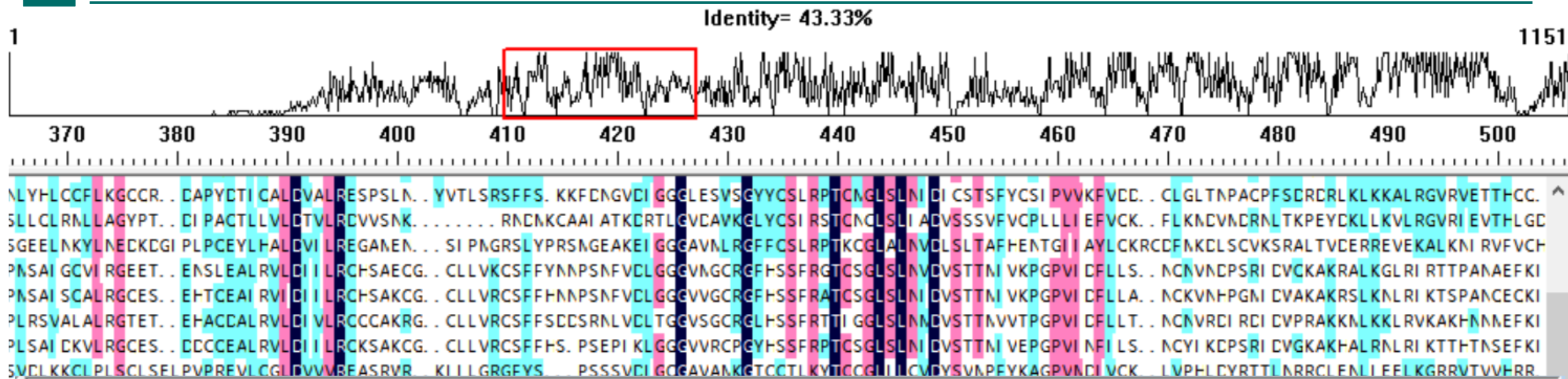


不同物种AGO1蛋白的结构域分析

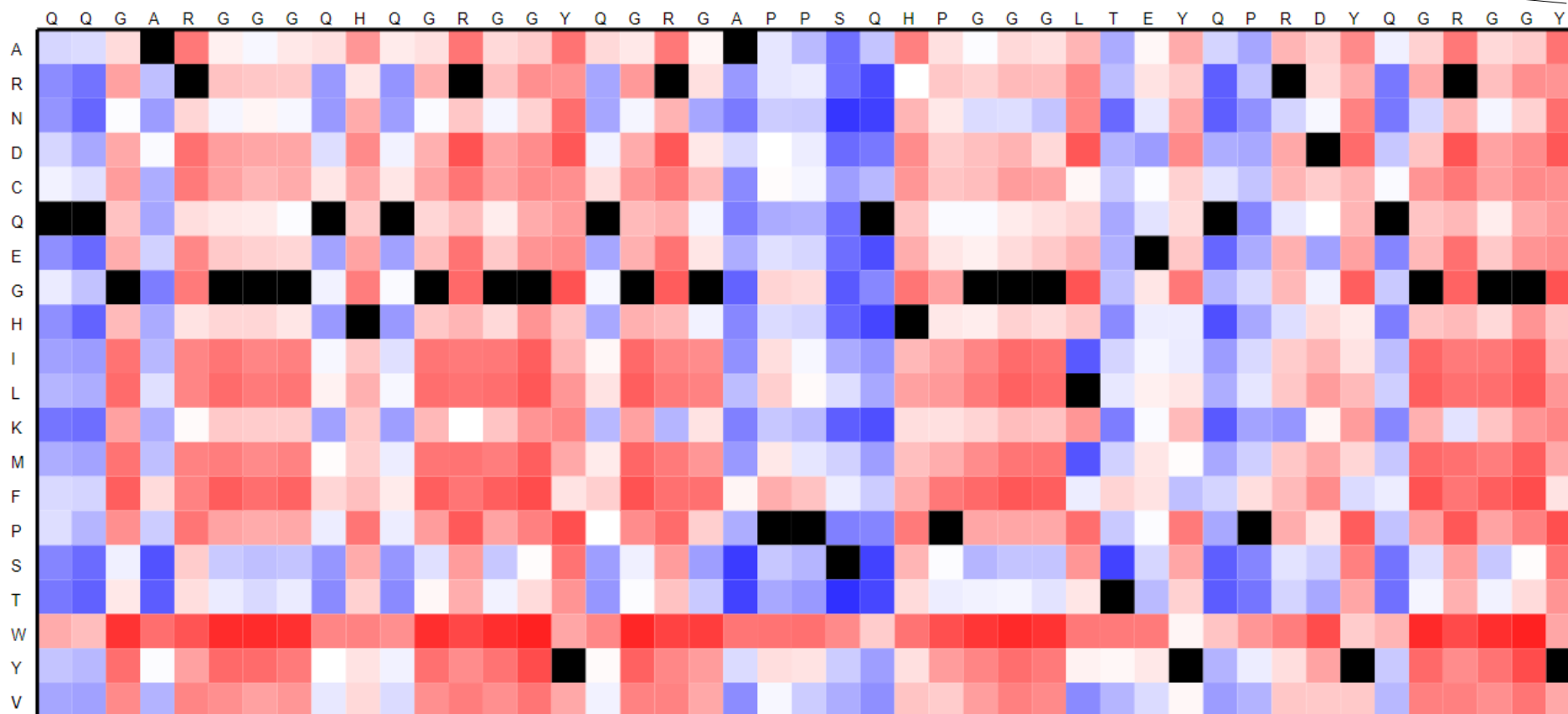
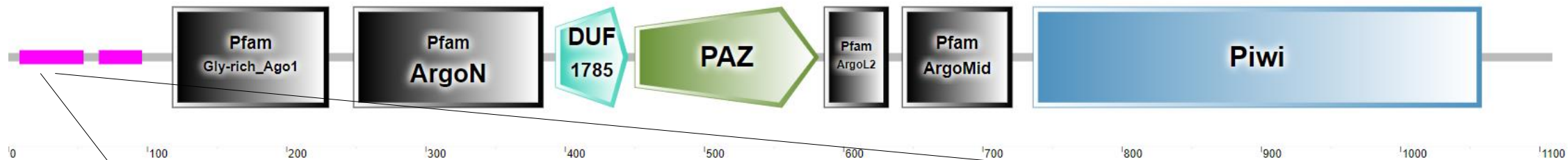


Motif	Symbol	Motif Consensus
1.		KICHPTEFDFYLC SHAGIQGTSRPAHYHVLWDENKFTADGLQTLTNNLCYTYARCTRSVSIVPPAYYAHLAAFRRARFYME
2.		GGMIKELLISFKRATGQKPQRIIFYRDGVSEGGFYQVLLYELDAIRKACASLEPNYQPPVTFVQVQKRHHTRLFANNHND
3.		KVEVTHRGNMRRKYRISGLTSQATRELSFPVDDRGTVKTVVQYFLETYGFNIQHTTLPCLQVGNQQRPNYLPMEVCKIVE
4.		RNTVLVDALSRRIPLVSDRPTIIFGADVTHPHGEDSSPSIAAVVASQDWPEVTKYAGLVSAQAHRQELIQDLFKVWQDP
5.		DILQTVHHNAYHEDPYAQEFGIKIDERLASVEARVLPPLPKYHDSGREKDVLPVVGQWNMMNKKMVNGGRVSNWACINF
6.		APQEALQVLDIVLRELPTARYSPVGRSFYSPNLGRRQQQLGEGLESWRGFYQSIRPTQMGLSLNIDMSSTAFIEPLPVIDF

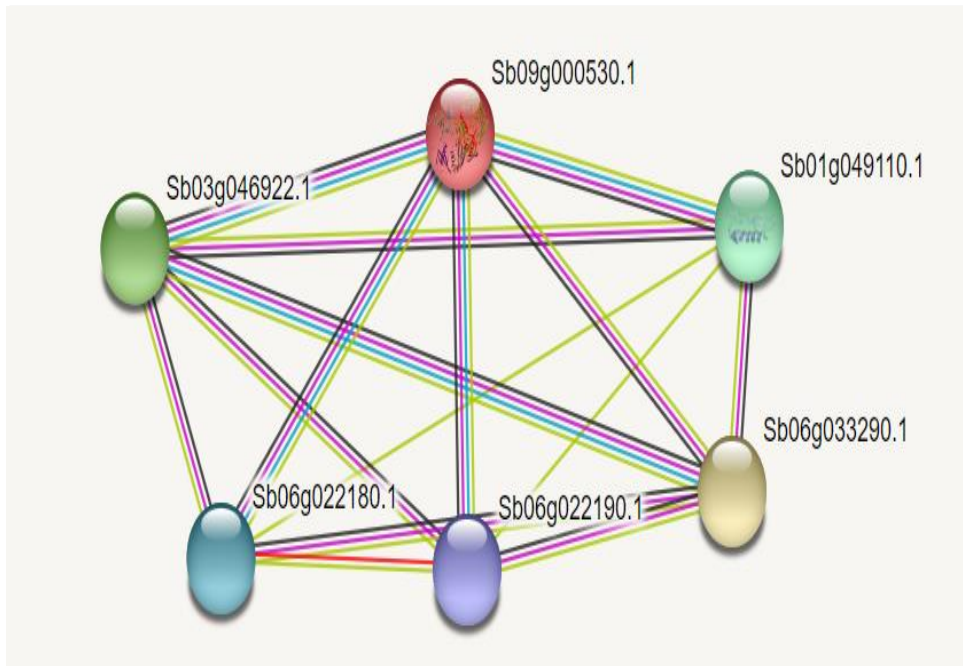
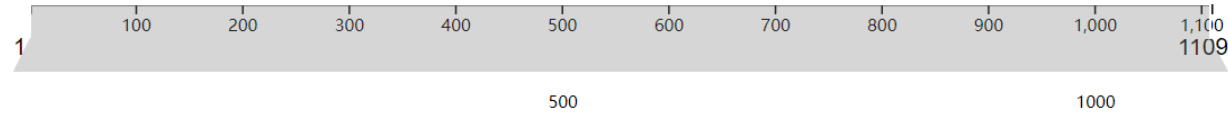
多序列比对



AGO蛋白结构分析



AGO蛋白的功能分析



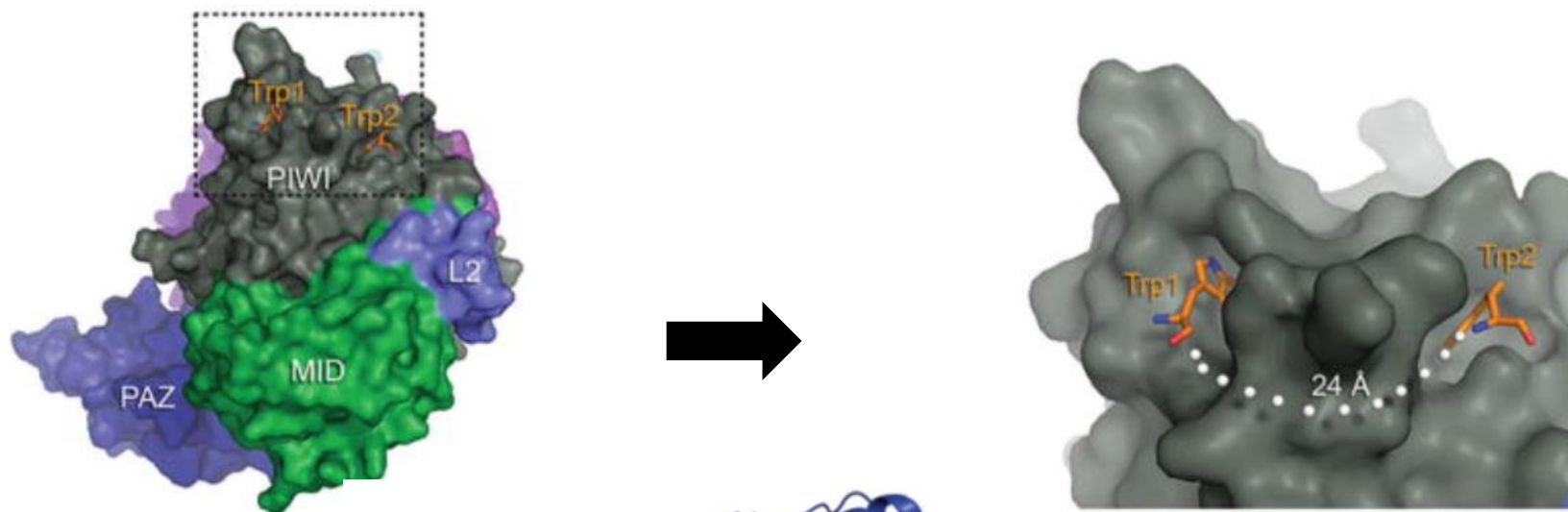
Sb09g000530.1: argonaute 1

Sb01g049110.1: helicase family, Dicer subfamily

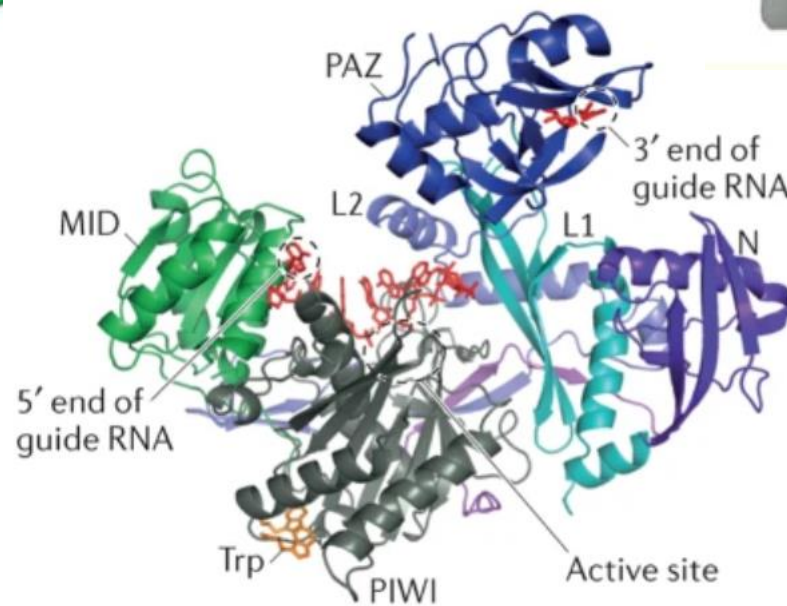
Sb06g033290.1: Multiple rna-binding domain-containing protein 1

Sb03g046922.1: DNA-dependent RNA polymerase.

AGO蛋白的功能分析



(Squirle NT et al., 2012)



(Ha M et al., 2014)



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