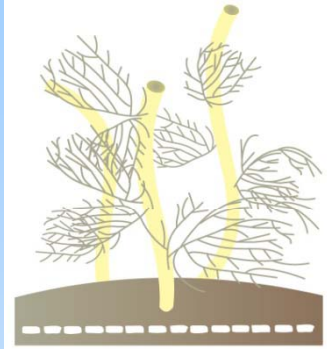


Knock-down of mucin-like genes using RNAi changed lectin staining in adult hermaphrodites of *Caenorhabditis elegans*

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Mucins are a family of proteins of high molecular weight that are rich in serine and threonine. Greater than 50 percent of their mass can be made up of glycans. In animal parasitic nematodes mucins are a component of the cuticle surface and are thought to be important in the evasion of the immune response (Doedens, Loukas and Maizels, 2001, *Acta Tropica* 79, 211 – 217). We tested the hypothesis that they are present on the cuticle surface of adult *C. elegans*.

Eleven mucin-like genes were knocked down using a RNAi feeding protocol (Kamath *et al*, 2003, *Nature* 421, 231-237) and screened for changes to the glycans present in the mouth, pharynx, grinder, surface coat, vulva and rectal regions using wheat germ agglutinin, WGA; concanavalin A; Con A; *Tetragonolobus purpuria* agglutinin, TPA; and peanut agglutinin, PNA, conjugated to FITC. Adult worms were scored visually using a Zeiss Axioplan microscope fitted with epifluorescence (Figure 1).

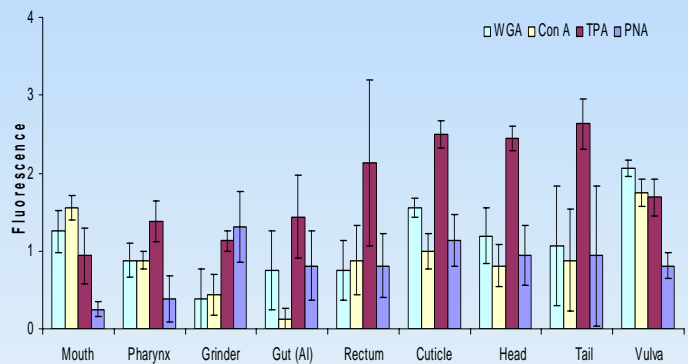
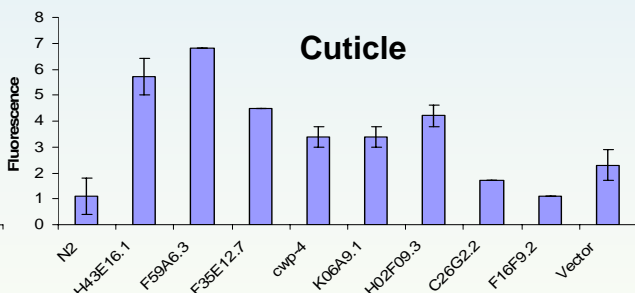
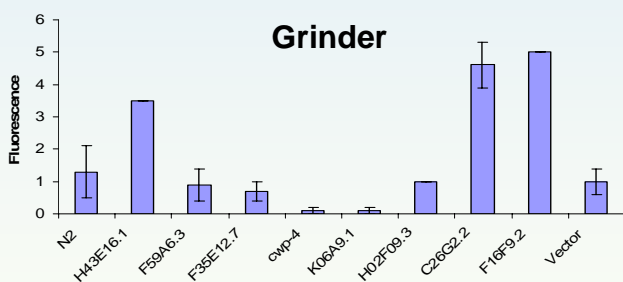


Figure 1. Localisation of lectins based on a score of 0, no fluorescence; 1, +/- fluorescence; 3, fluorescence; 4, high fluorescence (n = 4)



Knocking down mucins led to different binding patterns; *H43E16.1*, *C26G2.2* and *F16F9.2* increased binding of PNA to the grinder whereas *H43E16.1* and *F59A6.3* increased binding of PNA to the cuticle. Conversely, knock-down of *F35E12.7*, *cwp-4*, *K06A9.1* and *H02F09.3* that increased binding to the cuticle were similar to wild type worms. Knock-down of some mucin-like proteins affects surface coat glycans in *C. elegans*



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