



**Extended Data Figure 2: Extra-terminal crossovers occur in *H. bulbosum* more often than in *H. vulgare*.** (a) Ring bivalents with interstitial (i), subterminal (s), terminal (t) and extra-terminal (et) chiasmata. (b) Proportion of each type of chiasma based on the classification shown in (a). (c) Meiotic cells at metaphase I stage of *H. vulgare* cultivars “Barke” and “Morex” and *H. bulbosum* clone FB19-011-3 showing different bivalent configurations and chiasma positions. (d) FISH with 5S and 45S rDNA (green) and HVT01 (subtelomeric; red) on metaphase I cells. One chromosome pair (arrowhead) showed extra-terminal chiasmata in most cells analysed. Asterisks: extra-terminal chiasmata. Bar = 10µm.