Table 1. Outline modeling the proposed sibling competition arena. Includes the assumptions and conditions of the sibling competition arena, their role in reproductive isolation, and their relevance to *Microbotryum* and other fungal and plant systems.

Sibling competition arena: components that bar gene flow in combination with selfing		Application to *Microbotryum*	Application to other systems
Required 1. Competition	1.1 Limited resources: space/nutrients restrict establishment to a limited number of zygotes at an early stage, prior to detectable development	Occupation of a meristem limited to a single individual, the unsuccessful zygotes being unable to persist in the host	*Fungi* associated with systemic infection: limited number of genotypes occupy host *Plants*: limited space, above and below ground, for early establishment/germination
	1.2 Intense competition for establishment in the environment (e.g., host) through the production of multiple progeny	The number of diploid teliospores deposited on a host far exceeds the number that can ultimately colonize the host plant	*Fungi*: thousands of spores dispersed to each host individual *Plants*: number of seeds dispersed locally exceeds that which the environment can support
	1.3 Mixed population on the required resource: hybrids must always compete with nonhybrids for establishment	Hybrid hyphae are always produced simultaneously with nonhybrid hyphae prior to infection (due to selfing, 2.1, and to the presence of numerous siblings, 3.1)	*Fungi and plants*: deposition of mixed broods of hybrid and nonhybrid individuals on/in the same host/environment
	1.4 Hybrid fitness handicap: some degree of reduced competitive ability of hybrids	Infection success of hybrids on parental hosts decreases with genetic distance of species, even when measured in the absence of competition	*Fungi*: reduced infection ability of hybrids *Plants*: reduced establishment ability of hybrid seedlings
Contributes to meeting point 1.3 2. High selfing rates	2.1 Selfing: ensures the systematic presence of nonhybrids, even when conspecific density is locally reduced	High intrapromycelial mating (automixis) rates	*Fungi*: selfing (diploid or haploid) frequent *Plants*: self-compatibility widespread in many plant taxa
Contributes to meeting point 1.2 3. Sibling competition	3.1 Numerous progeny commonly compete intensively, enhancing competition between siblings, hybrid and nonhybrid alike	Many diploid teliospores of a single individual deposited on a host plant: nonhybrid and hybrid siblings are produced by intrapromycelial selfing and sporidial mating and compete for infection of the meristem	*Fungi*: thousands of spores produced by a single infection *Plants*: numerous seeds dispersed locally
Not required 4. Selection to avoid hybridization	4.1 Selfing and the co-occurrence of numerous progeny are not necessarily adaptations for avoiding hybridization	The sibling competition arena is likely a byproduct of life-history and reproductive strategies derived from ancestry or other selective pressures (e.g., numerous spores and high selfing rates may function as assurance in host and mate seeking)	*Fungi and plants*: selfing and overproduction of seeds or spores may serve as adaptations to facilitate reproduction and dispersal

form of preferential conjugation with conspecific over heterospecific sporidia (Le Gac et al. 2007b), even in sympatry (Refrégier et al. 2010). Postmating reproductive isolation has been detected, with hybrids showing reduced infection ability, but closely related species can produce viable hybrids (Sloan et al. 2008; de Vienne et al. 2009). Overall, the high viability of experimental crosses between closely related pathogen species and the weak ecological barriers to hybridization in the field are not consistent with the near total absence of gene flow in natural populations, which calls for investigation of additional mechanisms underlying this reproductive isolation (Gladieux et al. 2011).

Microbotryum violaceum exhibits a high rate of selfing, which may serve to explain the observed rarity of hybrids in the field (Giraud et al. 2008b; Refrégier et al. 2010; Gladieux