Table S3 Potential functions of LcARFs

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| Genes | Tissues | Functions in other studies | References |
| *LcARF1A* | ML/USF/FF | leaf senescence and flower abscission  | (Ellis et al., 2005) |
| *LcARF1B* | ML/FBS/USF |
| *LcARF1C* | ML/FBS/USF/FF |
| *LcARF1D* | ML/USF/MF/FF |
| *LcARF2A* | ML/USF/FF/YF | leaf senescence and flower abscission, fruit ripening, female and male gametophyte development, leaf longevity, lateral root formation and flower organ senescence | (Ellis et al., 2005; Lim et al., 2010; Breitel et al., 2016; Liu et al., 2017; Ren et al., 2017) |
| *LcARF2B* | ML/USF/FF |
| *LcARF2C* | ML/USF/YF |
| *LcARF2D* | ML/USF/FF |
| *LcARF2E* | ML/USF/FF |
| *LcARF2F* | USF/MF/FF/YF |
| *LcARF3A* | ML/FBS/USF/FF | leaf polarity specification, floral meristem determinacy, lateral organs, formation of epidermal cells and trichomes, de novo shoot regeneration, female and male gametophyte development, early flower development, developmental timing and patterning, somatic embryogenesis integument development and polarity determination  | (Fahlgren et al., 2006; Finet et al., 2010; Kelley et al., 2012; Liu et al., 2014a; Zhang et al., 2018; Pekker, 2005; Zheng et al., 2018; Liu et al., 2017; Cheng et al., 2013; Lin et al., 2015b) |
| *LcARF3B* | ML/USF/FF |
| *LcARF4A* | ML/FBS/USF/FF | organ polarity, lateral organs, sugar metabolism during tomato fruit development, female and male gametophyte development | (Hunter, 2006; Finet et al., 2010; Sagar et al., 2013; Liu et al., 2017; Yifhar et al., 2012; Pekker, 2005; Lin et al., 2015b) |
| *LcARF4B* | ML/FBS/USF/YF |
| *LcARF4C* | ML/FBS/USF/YF |
| *LcARF5A* | FBS/USF/MF/FF | embryonic root and flower formation, embryo patterning and vasculature, female and male gametophyte development | (Hardtke & Berleth, 1998; Liu et al., 2017) |
| *LcARF5B* | FBS/USF/MF/FF |
| *LcARF6A* | FBS/USF/MF/FF | flower maturation, floral development and female sterility, stress response | (Nagpal, 2005; Wu, Tian & Reed, 2006; Liu et al., 2014b; Jodder et al., 2017)  |
| *LcARF6B* | FBS/USF/MF/FF |
| *LcARF6C* | ML/FBS/USF/MF/FF |
| *LcARF6D* | ML/FBS/USF/MF/FF |
| *LcARF7A* | ML/FBS/USF | embryo patterning and vasculature, leaf expansion and lateral root growth, fruit set fruit growth in tomatoes, cross-talk between auxin and gibberellin signaling during tomato fruit set and development | (Hardtke & Berleth, 1998; Wilmoth et al., 2005; De Jong et al., 2009, 2011) |
| *LcARF7B* | ML/FBS/USF |
| *LcARF8A* | FBS/USF/MF/FF | fertilization and fruit development, flower maturation, floral development and female sterility, nodulation and lateral root development, bacterial stress, stamen elongation and endothecium lignification, parthenocarpy | (Goetz, 2006; Nagpal, 2005; Liu et al., 2014b; Jodder et al., 2017; Goetz et al., 2007; Wang et al., 2015; Ghelli et al., 2018) |
| *LcARF8B* | ML/FBS/USF/MF/FF |
| *LcARF9A* | ML/USF/MF/FF | cell division during early tomato fruit development | (De Jong et al., 2015) |
| *LcARF9B* | ML/USF/MF/FF |
| *LcARF10A* | ML/MF | lateral root formation, ovary patterning, floral organ abscission and lamina outgrowth, seed germination and post-germination stages, somatic embryogenesis | (Wang, 2005; Damodharan, Zhao & Arazi, 2016; Liu et al., 2007; Lin et al., 2015a) |
| *LcARF10B* | ML/FBS/USF/MF |
| *LcARF16A* | ML/MF | lateral root formation, phosphate stress, ovary patterning, floral organ abscission and lamina outgrowth, somatic embryogenesis | (Wang, 2005; Damodharan, Zhao & Arazi, 2016; Shen et al., 2013; Shen et al., 2014; Lin et al., 2015a) |
| *LcARF16B* | ML/USF |
| *LcARF16C* | ML/USF/FF |
| *LcARF16D* | ML/USF/MF/FF |
| *LcARF17A* | ML/FBS/USF/MF/FF | primexine formation in pollen, ovary patterning, floral organ abscission and lamina outgrowth, somatic embryogenesis | (Yang et al., 2013; Damodharan, Zhao & Arazi, 2016; Lin et al., 2015a) |
| *LcARF17B* | ML/FBS/USF/MF/YF |
| *LcARF18A* | ML/USF | seed weight and silique length | (Liu et al., 2015)  |
| *LcARF18B* | YL/ML/USF |
| *LcARF19A* | ML | leaf expansion and lateral root growth, rice leaf angles | (Wilmoth et al., 2005; Zhang et al., 2015)  |
| *LcARF19B* | USF/MF/FF |

YF: young fruit (25 days after fertilization), FF: female flower, MF: male flower, USF: undeterminated sex flowers, ML:mature leaves, YL: young leaves, FBS: fruit-bearing shoots.

The red font represents the genes in group1, group2 and group3 in Figure 5.

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