Table S1. **Medicinal phenolic compounds produced by transgenic hairy root cultures.**

Plant species	*A. rhizogenes* strains	Compounds	Biologycal activity	References
Scutellaria baicalensis Georgi	R1000+pRNAi-SbCHI	Baicalin, baicalein, and wogonin	Anti-inflammatory, antioxidant, and antitumor	Park *et al.* (2011)
Pueraria candollei Grah. ex. Benth	ATCC 43057	Daidzein and puerarin	Antioxidant	Danphitsanuparn *et al.* (2012)
Decalepis arayalpathra (Joseph & Chandras) Venter	TR105	2-Hydroxy-4-methoxy benzaldehyde (MBALD)	Antimicrobial, antioxidant, and antifungal	Sudha *et al.* (2013)
Dracocephalum moldavica L.	A4	Rosmarinic acid	Antioxidant, antiviral, anti-inflammatory, and antimicrobial	Weremczuk-Jeżyna *et al.* (2013)
Hypericum perforatum L.	A4	Xanthones	Antioxidant, antimicrobial, and cytotoxic	Tusevski *et al.* (2013)
Linum album Kotschy ex Boiss	LBA9402	Podophyllotoxin and 6-methoxy podophyllotoxin	Anticancerogenic and antiviral	Chashmi *et al.* (2013)
Linum narbonense L.	ATCC 15834	Justicidine B	Management of bone cancer and osteoclastogenesis	Ionkova *et al.* (2013)
Hyptis suaveolens (L.) Poit	ATCC 15834 and ATCC 15834+pTDT	Podophyllotoxin, 6-methoxy podophyllotoxin, and β-peltatin	Anticancerogenic	Bazaldúa *et al.* (2014)
Leontopodium nivale ssp. *alpinum* (Cass.) Greuter	ATCC 15834	Leoligin and 5-methoxy-leoligin	Pro-angiogenic, pro-arteriogenic, and treatment of myocardial infarction	Wawrosch *et al.* (2014)
Liunm mucronatum ssp. mucronatum	A13	Podophyllotoxin and 6-methoxy podophyllotoxin	Anticancerogenic and antiviral	Samadi *et al.* (2014)
Momordica charantia L.	KCTC 2703	Polyphenols	Antioxidant and antimicrobial	Thiruvengadam *et al.* (2014a)
Polygonum multiflorum Thunb	KCTC 2703	Emodin, physcion, and polyphenols	Antioxidant and antimicrobial	Thiruvengadam *et al.* (2014b)
Cucumis anguria L.	KCTC 2703	Flavonols, hydroxycinnamic, and hydroxybenzoic acids	Antioxidant and antimicrobial	Yoon *et al.* (2015)

Table S1. (continued)

Plant species	*A. rhizogenes* strains	Compounds	Biologycal activity	References
Linum album Kotschy ex Boiss and *Linum flavum* L.	LBA 9402 ATCC 15834	Podophyllotoxin, 6-methoxy podophyllotoxin, and methoxypodophyllotoxin-6-glucoside	Antitumor	Cong *et al.* (2015)
Brassica rapa ssp. *rapa* L.	KCTC 2703	Glucosinolates and polyphenols	Antioxidant, antimicrobial, and anticancerogenic	Chung *et al.* (2016)
Fagopyrum tataricum Gaertn	R1000, R1200, R13333, R15834, R1601, LBA9402, and A4	Phenolic acids, cyanidin 3-*O*-glucoside, and cyanidin 3-*O*-rutinoside	Antioxidant, anticancerogenic, and anti-hypertension	Thwe *et al.* (2016)
Linum album Kotschy ex Boiss	LBA9402	Podophyllotoxin, 6-methoxy podophyllotoxin, and phenolic acids	Anticancerogenic and antiviral	Tashackori *et al.*, (2016)
Linum usitatissimum L.	A4	Secoisolariciresinol diglucoside, secoisolariciresinol, and matairesinol	Antioxidant and antitumor	Gabr *et al.* (2016a)
Oldenlandia umbellata L.	MTCC 532	Anthraquinones	Treatment of kidney andbladder stones	Saranya & Siril, (2016)
Ocimum basilicum L.	A4	Rosmarinic acid and caffeic acid	Antioxidant	Srivastava *et al.*, (2016)
Salvia wagneriana Polak	ATCC 15834 and 1855 NCPPB	Rosmarinic acid	Antioxidant	Ruffoni *et al.* (2016)
Silybum marianum L.	A4	Silydianin, silybine, cinnamic acid, and *p*-cumaric acid	Antioxidant, hepatoprotective, and hepatoregenerative	Gabr *et al.*, (2016b)
Lactuca serriola L.	AR15834	Phenolic acids and flavonoids	Antioxidant and cytotoxic	El-Esawi *et al.* (2017)
Althea officinalis L.	A4, A13, ATCC 15834, and ATCC 15834 + GUS	Polyphenols	Antimicrobial, antiviral, and antitussive	Tavassoli & Safipour Afshar (2018)
Linum album Kotschy ex Boiss	LBA9402	Podophyllotoxin and 6-methoxy podophyllotoxin	Anticancerogenic and antiviral	Tashackori *et al.* (2018)

Table S1. (continued)

Plant species	*A. rhizogenes* strains	Compounds	Biologycal activity	References
Linum flavum L.	ATCC 15834	Podophyllotoxin, podophyllotoxin-glucoside, 6-methoxy podophyllotoxin, and 6-methoxy podophyllotoxin glucoside	Cytotoxic and antiviral	Renouard *et al.* (2018)
Nitraria schoberi L.	15834 SWISS	Saponins, phenolic acids, pectins, protopectins, and catechin	Antiviral against influenza virus subtypes A(H5N1) and A (H3N2)	Zheleznichenko *et al.* (2018)
Raphanus sativus L.	MTCC 2364	Quercetin and polyphenols	Antioxidant	Balasubramanian *et al.* (2018)
Salvia viridis L.	A4	Caffeic acid derivatives and rosmarinic acid	Antioxidant and anti-inflammatory	Grzegorczyk-Karolak *et al.* (2018)
Sphagneticola calendulacea L.	LBA1334+pCA and MBIA1391Z	Wedelolactone	Anti-hepatotoxic and anticancerogenic	Kundu *et al.* (2018)
Scutellaria lateriflor L.	R1000	Baicalin, baicalein, and wogonin	Antioxidant and anticancerogenic	Tuan *et al.* (2018)
Salvia miltiorrhiza Bunge	ATCC 15834	Phenolic acids and tanshinones	Antioxidant, anticancerogenic, anti-inflammatory, and antibacterial	Xing *et al.* (2018)
Artemisia vulgaris L.	A4	Flavonoids	Antioxidant	Matvieieva *et al.* (2019)
Aster scaber Thunb.	KCTC 2703	Flavonoids, phenolic acids, and resveratrol	Antioxidant, antimicrobial, antidiabetic, anti-inflammatory, and cytotoxic	Ghimire *et al.* (2019)
Gentiana utriculosa L.	A4M70GUS	Decussatin and decussatin-1-*O*-primeveroside	Hepatoprotective	Vinterhalter *et al.* (2019)
Hyptis suaveolens (L.) Poit.	ATCC 15834+pTDT	Podophyllotoxin	Anticancerogenic	Bazaldúa *et al.* (2019)
Lactuca indica L.	R1000	Hydroxycinnamic acids and flavonoids	Antioxidant	Yi *et al.* (2019)
Cichorium intybus L.	*R. rhizogenes* 2659	3,5-dicaffeoylquinic acid	Antioxidant and antibacterial	Bernard *et al.* (2020)

Table S1. (continued)

Plant species	*A. rhizogenes* strains	Compounds	Biologycal activity	References
Cucumis anguria L.	R1000	Polyphenols	Antibacterial and antioxidant	Sahayarayan *et al.* (2020)
Echinacea purpurea L.	ATCC 43057	Caffeic acids derivatives	Antibacterial, antiviral, antifungal, and anticancerogenic	Demirci *et al.* (2020)
Echium plantagineum L.	ATCC 15834	Shikonin and acetylshikonin	Anti-inflammatory, antimicrobial, antitumor, and antiviral	Fu *et al.* (2020)
Hypericum sinaicum L.	A4, A4T, A4T-GUS, and LBA1334	Hypericin	Anti-inflammatory and sedative	Khlifa *et al.* (2020)
Mentha spicata L.	A13, R318, A4, GMI 9534, and ATCC 15834	Phenolic acids	Antioxidant and antimicrobial	Yousefian *et al.* (2020)
Ocimum basilicum L.	R1000	Rosmarinic acid	Antioxidant	Kwon *et al.* (2020)
Salvia bulleyana Diels	A4	Hydroxycinnamic acids	Antimicrobial, antioxidant, and anti-inflammatory	Wojciechowska *et al.* (2020)
Althaea officinalis L., *Artemisia vulgaris* L., and *Artemisia tilesii* Ledeb.	A4+pCB124	Flavonoids	Antioxidant	Bohdanovych *et al.* (2021)
Arachis hypogaea L.	ATCC 15834	Arachidin-6	Antioxidant	Gajurel *et al.* (2021)
Gentiana dinarica Beck	A4 M70GUS	Norswertianin-1-*O*-primeveroside and norswertianin	Antibacterial, antifungal, and antioxidant	Vinterhalter *et al.* (2021)
Panax ginseng C.A. Meyer	R1601-PAP1	Anthocyanins	Antioxidant	Jin *et al.* (2021)
Pelargonium sidoides DC.	*A. tumefaciens* $C_{58}C_1$ +pRiA4	Coumarin and phenolic compounds	Antibacterial and antviral	Yousefian *et al.* (2021)
Rhodiola quadrifida (Pall.) Fisch. & C.A. Mey.	A4	Salidroside and rosavin	Hemostatic and antitussive	Stepanova *et al.* (2021)
Rubia yunnanensis Diels	A4	Quinones	Anticancerogenic and antioxidant	Miao *et al.* (2021)

Table S1. (continued)				
Plant species	**Plant species**	**Plant species**	**Plant species**	**Plant species**
Salvia miltiorrhiza Bunge	C58C1	Phenols	Antioxidant and anti-inflammatory	Xu *et al.* (2021)
Glycyrrhiza inflata Bat.	R1000-pCAMBIA2301-AtMYB12	Licochalcone A and echinatin	Anti-inflammatory, antioxidant, and antimicrobial	Wu *et al.* (2022)
Curcuma longa L.	A4	Curcumin, demethoxycurcumin, and bisdemethoxycurcumin	Anticamcerogenic and anti-inflammatrory	Sandhya & Giri (2022)
Salvia bulleyana Diels	A4	Phenols	Antioxidant, cytotoxic, and antibacterial	Krzemińska *et al.* (2022)
Salvia nemorosa L.	ATCC 15834	Rosmarinic acid	Antioxidant	Khoshsokhan *et al.* (2022)
Sphaeralcea angustifolia (Cav) G. Don	ATCC 15834/pTDT	Scopoletin and sphaeralcic acid	Anti-inflammatrory	Reyes-Pérez *et al.* (2022)
Agastache rugosa Kuntze	R1000	Rosmarinic acid	Antimicrobial	Yeo *et al.* (2023)
Crotalaria ochroleuca G. Don	R1601	Apigenin-6,8-C-diglucoside, luteolin 6-C-glucoside, and apigenin	Antioxidant and anticancerogenic	Blank *et al.* (2023)
Dracocephalum moldavica L.	A4	Caffeic acid	Antioxidant and anti-inflammatory	Weremczuk-Jeżyna *et al.* (2023)
Plumbago auriculata L.	ATCC 15834	Plumbagin	Anti-inflammatory, antiradiation, and anti-rheumatoid arthritis	Zhao *et al.* (2023)
Salvia plebeia R. Br.	R1000	Rosmarinic acid, phenols, and flavonoids	Antioxidant	Choi *et al.* (2023)
Thymus daenensis Celak	ATCC 15834 and A4	Phenols	Antioxidant	Alamholo & Soltani (2023)
Agastache rugosa (Fisch. & C. A. Mey.)	A4	Rosmarinic acid	Antioxidant	Kozłowska *et al.* (2024)
Calendula officinalis L.	A4	Flavonoids	Antioxidant	Matvieieva *et al.* (2024)

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