



**Figure S1.** The main component analysis (PCA), orthogonal signal correction, and OPLS-DA model plots (A) Green is *R. liliiflorum* white part (W) and orange is yellow part (W) of *R. liliiflorum*, purple is *R. liliiflorum* quality control sample. (B) The OPLS-DA model plots of MY compared to MW.

**Table S1.** Differential flavonoid metabolites in the white and yellow fractions of *R. liliiflorum*.

Formula	Compounds	Class II	Type
C <sub>15</sub> H <sub>12</sub> O <sub>4</sub>	Pinocembrin (Dihydrochrysin)	Flavanones	down
C <sub>15</sub> H <sub>10</sub> O <sub>5</sub>	Baicalein	Flavones	up
C <sub>15</sub> H <sub>10</sub> O <sub>5</sub>	6-Hydroxydaidzein	Isoflavones	up
C <sub>15</sub> H <sub>14</sub> O <sub>5</sub>	Epiafzelechin	Flavanols	up
C <sub>15</sub> H <sub>14</sub> O <sub>5</sub>	Afzelechin (3,5,7,4'-Tetrahydroxyflavan)	Flavanols	up
C <sub>16</sub> H <sub>12</sub> O <sub>5</sub>	3,7-dihydroxy-4'-methoxyflavone	Flavones	down
C <sub>15</sub> H <sub>12</sub> O <sub>6</sub>	Fustin	Flavanonols	up
C <sub>17</sub> H <sub>14</sub> O <sub>5</sub>	Pterocarpine	Isoflavones	down
C <sub>16</sub> H <sub>12</sub> O <sub>7</sub>	Azaleatin (5-O-Methylquercetin)	Flavonols	down
C <sub>19</sub> H <sub>18</sub> O <sub>5</sub>	Eucalyptin (5-Hydroxy-7,4'-dimethoxy-6,8-dimethylflavone)	Flavanones	up
C <sub>20</sub> H <sub>18</sub> O <sub>10</sub>	Kaempferol-3-O-arabinoside (Juglanin)	Flavonols	up
C <sub>21</sub> H <sub>22</sub> O <sub>9</sub>	O-MethylNaringenin-8-C-arabinoside	Flavonoid carbonoside	up
C <sub>20</sub> H <sub>19</sub> O <sub>10</sub> +	Cyanidin 3-xyloside	Anthocyanidins	down
C <sub>22</sub> H <sub>32</sub> O <sub>12</sub>	Di-O-galloyl Methyl gallate	Flavanols	down
C <sub>23</sub> H <sub>25</sub> O <sub>12</sub> +	Malvidin-3-O-glucoside (Oenin)	Anthocyanidins	down
C <sub>23</sub> H <sub>25</sub> O <sub>12</sub> +	Malvidin-3-O-galactoside (Primulin)	Anthocyanidins	down
C <sub>23</sub> H <sub>22</sub> O <sub>13</sub>	Quercetin-3-O-(6"-acetyl)galactoside	Flavonols	up
C <sub>22</sub> H <sub>20</sub> O <sub>14</sub>	Mearnsetin-3-O-glucuronide	Flavones	down
C <sub>24</sub> H <sub>22</sub> O <sub>13</sub>	6"-O-Malonylgenistin	Isoflavones	up
C <sub>24</sub> H <sub>22</sub> O <sub>14</sub>	Kaempferol-3-O-(6"-malonyl)galactoside	Flavonols	up
C <sub>24</sub> H <sub>22</sub> O <sub>14</sub>	Kaempferol-3-O-(6"-malonyl)glucoside	Flavonols	up
C <sub>25</sub> H <sub>24</sub> O <sub>14</sub>	Chrysoeriol-7-O-(6"-malonyl)glucoside	Flavones	up
C <sub>24</sub> H <sub>22</sub> O <sub>15</sub>	Quercetin-3-O-(6"-malonyl)galactoside	Flavonols	up

C <sub>24</sub> H <sub>22</sub> O <sub>15</sub>	Quercetin-7-O-(6''-malonyl)glucoside	Flavonols	up
C <sub>30</sub> H <sub>24</sub> O <sub>12</sub>	Tetrahydroxyflavan-(4 $\alpha$ -8-epicatechin)	Flavanols	up
C <sub>30</sub> H <sub>28</sub> O <sub>12</sub>	Isosalipurposide-6''-O-p-coumaric acid	Chalcones	up
C <sub>27</sub> H <sub>22</sub> O <sub>15</sub>	Quercetin-3-O-(4''-O-galloyl)arabinoside	Flavonols	up
C <sub>27</sub> H <sub>30</sub> O <sub>15</sub>	Kaempferol-3-O-glucoside-7-O-rhamnoside	Flavonols	up
C <sub>27</sub> H <sub>31</sub> O <sub>15</sub> +	Cyanidin-3-O-rutinoside (Keracyanin)	Anthocyanidins	up
C <sub>27</sub> H <sub>28</sub> O <sub>16</sub>	Apigenin-6-C-(2''-glucuronyl)glucoside	Flavonoid carbonoside	up
C <sub>28</sub> H <sub>33</sub> O <sub>15</sub> +	Peonidin-3-O-rutinoside	Anthocyanidins	up
C <sub>27</sub> H <sub>31</sub> O <sub>16</sub> +	Delphinidin-3-O-rutinoside	Anthocyanidins	up
C <sub>31</sub> H <sub>32</sub> O <sub>13</sub>	Phloretin-4'-O-(6''-Feruloyl)glucoside	Chalcones	down
C <sub>28</sub> H <sub>24</sub> O <sub>16</sub>	Quercetin-3-O-(6''-galloyl)glucoside	Flavonols	down
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	Tamarixetin-3-O-rutinoside	Flavonols	up
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	6-C-Methylquercetin-3-O-rutinoside	Flavonols	up
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	Isorhamnetin-3-O-neohesperidoside	Flavonols	up
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	Isorhamnetin-3-O-galactoside-7-O-rhamnoside	Flavonols	up
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	Isorhamnetin-3-O-glucoside-7-O-rhamnoside	Flavonols	up
C <sub>28</sub> H <sub>32</sub> O <sub>16</sub>	Chrysoeriol-6-C-glucoside-4'-O-glucoside	Flavonoid carbonoside	up
C <sub>29</sub> H <sub>36</sub> O <sub>15</sub>	Farrerol-5,7-di-O-glucoside	Flavanones	down
C <sub>27</sub> H <sub>30</sub> O <sub>17</sub>	Quercetin-5,4'-di-O-glucoside	Flavonols	down
C <sub>27</sub> H <sub>30</sub> O <sub>17</sub>	Quercetin-3,7-diglucoside	Flavonols	up
C <sub>30</sub> H <sub>27</sub> O <sub>15</sub> +	Delphinidin-3-O-(6''-O-caffeoyl)glucoside	Anthocyanidins	down
C <sub>31</sub> H <sub>30</sub> O <sub>15</sub>	Luteolin-7-O-(6''-eudesmyl)glucoside	Flavones	down
C <sub>29</sub> H <sub>32</sub> O <sub>17</sub>	Kaempferol-3-O-(6''-Acetyl)glucosyl-(1 $\rightarrow$ 3)-Galactoside	Flavonols	down
C <sub>36</sub> H <sub>36</sub> O <sub>18</sub>	Isoorientin-7-O-(6''-p-coumaroyl)glucoside	Flavonoid carbonoside	down
C <sub>20</sub> H <sub>19</sub> O <sub>10</sub> +	Cyanidin-3-O-arabinoside	Anthocyanidins	down
C <sub>37</sub> H <sub>38</sub> O <sub>18</sub>	Vitexin-7-O-(6''-feruloyl)glucoside	Flavonoid carbonoside	down
C <sub>21</sub> H <sub>20</sub> O <sub>10</sub>	Genistein-7-O-galactoside	Isoflavones	up
C <sub>21</sub> H <sub>20</sub> O <sub>10</sub>	Apigenin-5-O-glucoside	Flavones	up
C <sub>20</sub> H <sub>19</sub> O <sub>11</sub> +	Delphinidin-3-O-arabinoside	Anthocyanidins	up
C <sub>22</sub> H <sub>22</sub> O <sub>10</sub>	Glycitin (Glycitein 7-O-Glucoside)	Isoflavones	down
C <sub>22</sub> H <sub>22</sub> O <sub>10</sub>	Calycosin-7-O-glucoside	Isoflavones	up
C <sub>22</sub> H <sub>22</sub> O <sub>10</sub>	Acacetin-7-O-galactoside	Flavones	up
C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	Luteolin-3'-O-glucoside	Flavones	up
C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	Kaempferol-4'-O-glucoside	Flavonols	up
C <sub>21</sub> H <sub>21</sub> O <sub>11</sub> +	Cyanidin-3-O-glucoside (Kuromanin)	Anthocyanidins	down
C <sub>21</sub> H <sub>21</sub> O <sub>11</sub> +	Cyanidin-3-O-galactoside	Anthocyanidins	down
C <sub>21</sub> H <sub>21</sub> O <sub>11</sub> +	Cyanidin-3-O-glucoside chloride	Anthocyanidins	down
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	Epicatechin glucoside	Flavanols	up
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	Sieboldin	Chalcones	down
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	Epicatechin-6-C- $\beta$ -D-glucopyranoside	Flavanols	up
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	Epicatechin-4'-O- $\beta$ -D-glucopyranoside	Flavanols	up
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	Epicatechin-3'-O- $\beta$ -D-glucopyranoside	Flavanols	up
C <sub>21</sub> H <sub>24</sub> O <sub>11</sub>	3-Hydroxyphloretin-4'-O-glucoside	Chalcones	down

C <sub>22</sub> H <sub>22</sub> O <sub>11</sub>	Pratensein-7-O-glucoside	Isoflavones	up
C <sub>22</sub> H <sub>22</sub> O <sub>11</sub>	Isorhamnetin-3-O-rhamnoside	Flavonols	down
C <sub>22</sub> H <sub>22</sub> O <sub>11</sub>	Rhamnetin-3-O-rhamnoside	Flavonols	down
C <sub>22</sub> H <sub>22</sub> O <sub>11</sub>	8-Methoxykaempferol-7-O-rhamnoside	Flavonols	down
C <sub>22</sub> H <sub>22</sub> O <sub>12</sub>	6-Methoxyquercetin-3-O-rhamnoside	Flavonols	down
C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	Luteolin-8-C-glucoside (Orientin)	Flavonoid carbonoside	up
C <sub>21</sub> H <sub>22</sub> O <sub>11</sub>	Eriodictyol-3'-O-glucoside	Flavanones	up
C <sub>23</sub> H <sub>24</sub> O <sub>13</sub>	5,6,3',4'-Tetrahydroxy-3,7-dimethoxyflavone-6-O-glucoside	Flavones	up
C <sub>30</sub> H <sub>32</sub> O <sub>19</sub>	Kaempferol-3-O-(6''-Malonyl)glucoside-7-O-Glucoside	Flavonols	up
C <sub>37</sub> H <sub>38</sub> O <sub>19</sub>	Kaempferol-3-O-(6''-Feruloyl)glucosyl-(1→4)-galactoside	Flavonols	down
C <sub>22</sub> H <sub>22</sub> O <sub>12</sub>	Laricitrin-3-O-rhamnoside	Flavonols	down
C <sub>23</sub> H <sub>26</sub> O <sub>11</sub>	Persicoside	Flavanones	up

Note: +represents the substance as a positive optical substance. Down represents the content of the difference in the white part (W) of this difference in the white part of *R. liliiflorum* (W), and UP indicates that the content of the difference in the white part of *R. liliiflorum* (W) is lower than the yellow part (Y).

**Table S2.** The corresponding relationship between unigene and enzyme

Gene name	Gene number	regulated
CHS	Cluster-12951.29076	down
	Cluster-12951.79840	down
F3'5'H	Cluster-12951.24184	down
FLS	Cluster-12951.92493	down
DFR	Cluster-12951.86723	up
	Cluster-12951.153923	down
GT1	Cluster-12951.51629	down
	Cluster-12951.138355	up
	Cluster-12951.69986	up
BZ1	Cluster-12951.124492	up
	Cluster-12951.147714	up
	Cluster-12951.138886	up
LAR	Cluster-12951.85487	up
	Cluster-12951.71771	up
	Cluster-12951.82321	down
HID	Cluster-12951.93932	down
	Cluster-12951.149843	down
	Cluster-12951.93900	down
I2'H	Cluster-12951.99569	down
	Cluster-12951.51547	down
VR	Cluster-12951.84083	up
	Cluster-12951.84115	up
	Cluster-12951.13203	down

Note: Down represents the content of the gene in the white part of *R. liliiflorum* (W) higher than the yellow part (Y). Up indicates that the content of the white (W) of the gene is lower than the yellow part (Y).