

## SERVICE DE SPECTROMETRIE DE MASSE DE L'ISIC (SSMI)

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### *ANALYSES GC-MS*

Le 09 Mai 2011

**Objet:** Analyse d'une huile essentielle par GC-MS  
**Nom:** **Curcuma aromatique**  
**Lot:** **CUR401D080114**  
**Destinataire :** Entreprise Gedane (Lausanne, Suisse)  
**Composés majoritaires:**  **$\beta$ -Curcumene ; ar-Curcumene**

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### *CONDITIONS EXPERIMENTALES*

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**Type d'instrument :** GC CP-3800 couplé au 1200L Triple quadrupole MS/MS (Varian)  
**Mode d'ionisation :** Impact électronique (IE), 70 eV (mode positif)  
**Gamme de masse :** *m/z* 50-250 en 0.5 sec  
**Colonne :** FactorFour VF-5ms (5% phenyl-methyl 95% dimethyl polysiloxane, 0.25mm x 30 m)  
**Débit :** 1 mL/min  
**Gradient :** 50°C pendant 3 min; Montée à 150°C en 20 min; Montée à 250°C en 7 min  
**Calibrant :** FC43  
**Echantillons :** Huile essentielle diluée 1:500 dans l'éther. Injection de 1  $\mu$ L.

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Figure 1 – Chromatogramme TIC-GC/MS d'huile essentielle de Curcuma aromatique (CUR401D080114) analysée sur colonne capillaire FactorFour VF-5ms (5% phenyl-methyl 95% diméthylpolysiloxane, 0.25mm x 30 m). Les numéros des pics sont reportés dans la Table 1.

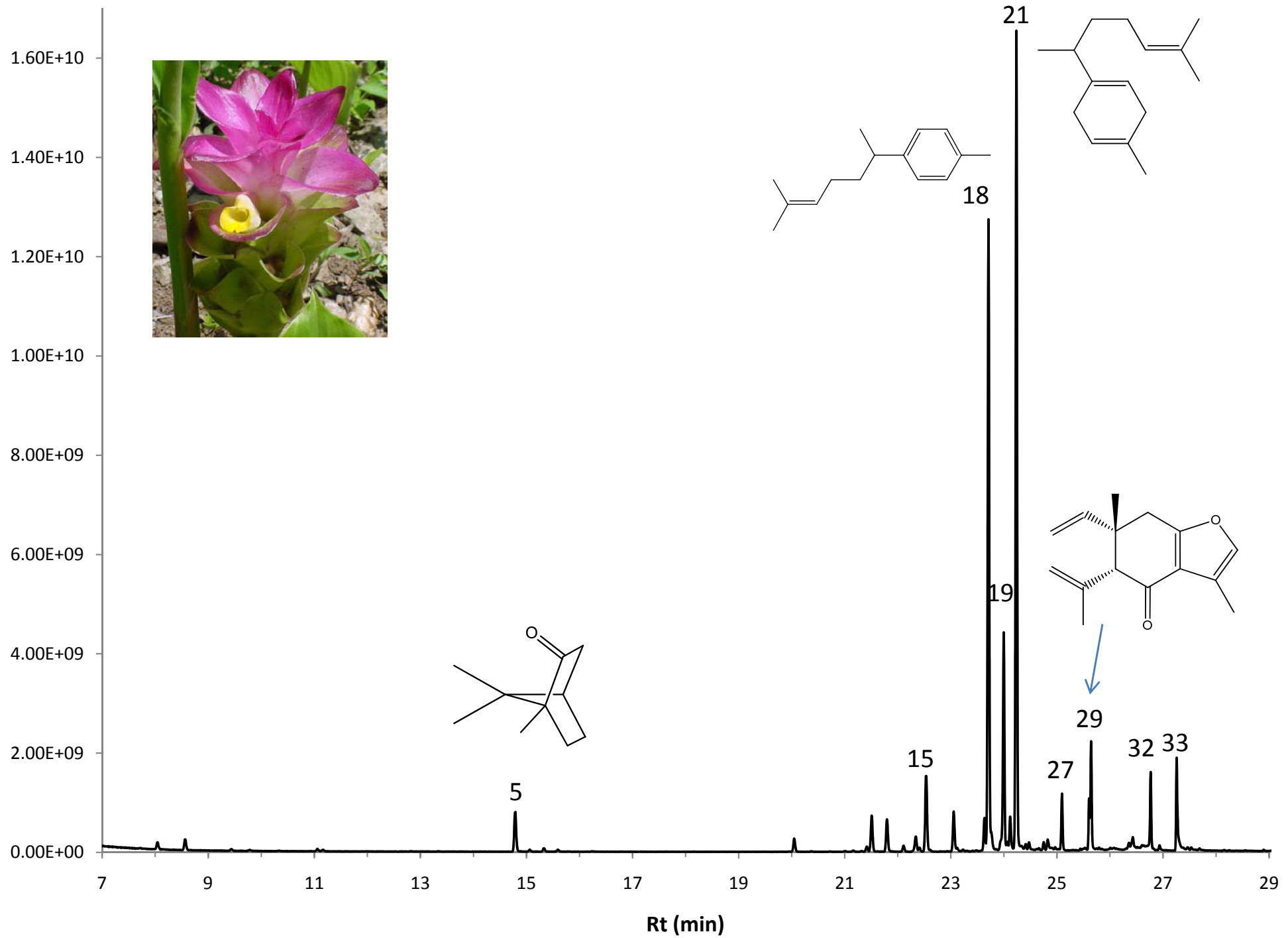


Table 1 – Composition de l'huile essentielle de Curcuma aromatique (CUR401D080114)

N°	Retention Time (min.)	Area	% of Total	Identification (NIST 08 matching)	Prob (%)
1	8.04	3.57E+08	0.35	$\alpha$ -Pinene	83
2	8.56	5.73E+08	0.56	camphene	66
3	11.06	1.26E+08	0.12	D-Limonene	34
4	11.16	1.06E+08	0.10	Eucalyptol	73
<b>5</b>	<b>14.79</b>	<b>2.08E+09</b>	<b>2.04</b>	<b>Camphor</b>	<b>72</b>
6	15.06	9.17E+07	0.09	Camphene Hydrate	21
7	15.33	1.89E+08	0.19	Isoborneol	62
8	15.59	9.28E+07	0.09	Borneol	83
9	20.05	6.47E+08	0.64	$\delta$ -Elemene	63
10	21.42	2.48E+08	0.24	7-epi-Sesquithujene	27
11	21.51	1.71E+09	1.68	$\beta$ -Elemene	25
12	21.80	1.59E+09	1.56	Sesquithujene	58
13	22.11	2.94E+08	0.29	7-epi- $\alpha$ -Cedrene	68
14	22.34	8.06E+08	0.79	$\beta$ -Caryophyllene	30
<b>15</b>	<b>22.53</b>	<b>3.90E+09</b>	<b>3.84</b>	<b><math>\gamma</math>-Elemene</b>	<b>77</b>
16	23.05	1.96E+09	1.93	Sesquisabinene A	69
17	23.63	1.32E+09	1.30	$\alpha$ -Cedrene	61
<b>18</b>	<b>23.71</b>	<b>2.71E+10</b>	<b>26.62</b>	<b>ar-Curcumene</b>	<b>72</b>
<b>19</b>	<b>24.00</b>	<b>9.42E+09</b>	<b>9.25</b>	<b>Furanoelemene / Atractylone</b>	<b>75 / 69</b>
20	24.06	9.76E+07	0.10	IsoGermacrene A	62
<b>21</b>	<b>24.24</b>	<b>3.28E+10</b>	<b>32.18</b>	<b><math>\beta</math>-Curcumene</b>	<b>68</b>
22	24.41	1.74E+08	0.17	$\omega$ / $\delta$ -Cadinene	61 / 25
23	24.47	2.59E+08	0.25	$\beta$ -Sesquiphellandrene	68
24	24.75	3.11E+08	0.31	Zonarene	*
25	24.83	5.87E+08	0.58	Selina-3,7(11)-diene / $\beta$ -Guaiene	61 / 25
26	24.90	1.03E+08	0.10	Nerolidol	10
<b>27</b>	<b>25.09</b>	<b>2.09E+09</b>	<b>2.05</b>	<b>Germacrene B</b>	<b>67</b>
28	25.61	1.52E+09	1.50	Elemenone	71
<b>29</b>	<b>25.64</b>	<b>3.66E+09</b>	<b>3.60</b>	<b>Epicurcerenone</b>	<b>81</b>
30	26.36	3.35E+08	0.33	ar-Turmerone	75
31	26.43	8.33E+08	0.82	$\beta$ -Bisabololene	20
<b>32</b>	<b>26.77</b>	<b>2.96E+09</b>	<b>2.91</b>	<b>Germacrone</b>	<b>71</b>
<b>33</b>	<b>27.26</b>	<b>3.85E+09</b>	<b>3.78</b>	<b>Xanthorhizol</b>	<b>95</b>

\* Manual identification

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