

# Technical Datasheet

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|--------------------------------|---|
| <b>Analysis Name:</b>          | GMO Multi-Screening by RTi-PCR  |
| <b>Method Number</b>           | LI-00.038   |
| <b>Scope of Application:</b>   | The method is applicable to all DNA extracted with LI-00.385 from raw materials and derivatives (such as flour, semolina, grits...) or finished products (including petfood).   |
| <b>Description:</b>            | Based on a 384-well plate format combining 24 multiplex RTi-PCR reactions, this method allows the detection of 47 GM- targets. These targets enable the identification of transgenic maize, soya, rice, wheat, rapeseed, cotton, potato and tomato.   |
| <b>Sample Weight Required:</b> | DNA extracted from LI-00.385  |
| <b>Analytical Platform:</b>    | Real-Time PCR   |
| <b>Special Information:</b>    | <p>Qualitative results are expressed as “Detected” or “Not Detected” per analyte with limits of detection ranging from 0.1% to 0.001% depending on the target.</p> <p>In case where GM maize or GM soy is detected contact Customer service for possible quantification of these GM-events.</p> |

| Analyte Reported | Limit of Detection (LOD <sub>REL</sub> ) | Unit of Measure |
|------------------|--|-----------------|
| Soya             | 0.01                                     | %               |
| Maize            | 0.02                                     | %               |
| Rice             | 0.001                                    | %               |
| Wheat            | 0.1                                      | %               |
| Rapeseed         | 0.01                                     | %               |
| Potato           | 0.01                                     | %               |
| Cotton           | 0.005                                    | %               |
| Tomato           | 0.02                                     | %               |

|           |       |   |
|-----------|-------|---|
| p-35S     | 0.01  | % |
| p-FMV     | 0.02  | % |
| t-NOS     | 0.01  | % |
| t-E9      | 0.02  | % |
| Bar       | 0.02  | % |
| CP4EPSPS  | 0.04  | % |
| Pat       | 0.02  | % |
| Hph       | 0.01  | % |
| NptII     | 0.02  | % |
| Cry1Ab/c  | 0.04  | % |
| Bt 176    | 0.02  | % |
| CBH351    | 0.02  | % |
| T25       | 0.07  | % |
| MON810    | 0.04  | % |
| Bt11      | 0.045 | % |
| MON863    | 0.03  | % |
| NK603     | 0.04  | % |
| GA21      | 0.02  | % |
| TC 1507   | 0.03  | % |
| DAS59122  | 0.04  | % |
| MIR604    | 0.04  | % |
| MON88017  | 0.045 | % |
| MON89034  | 0.045 | % |
| DP-98140  | 0.02  | % |
| MIR162    | 0.03  | % |
| SYN3272   | 0.045 | % |
| RRS       | 0.01  | % |
| A2704-12  | 0.03  | % |
| DP-356043 | 0.01  | % |
| DP-305423 | 0.005 | % |
| MON89788  | 0.01  | % |
| MON87701  | 0.02  | % |



|             |       |   |
|-------------|-------|---|
| BPS-CV127-9 | 0.01  | % |
| FG72        | 0.02  | % |
| A5547-127   | 0.02  | % |
| Bt63        | 0.01  | % |
| KMD1        | 0.02  | % |
| Xa21        | 0.01  | % |
| Plant       | 0.001 | % |

| Target DNA   | Description  |
|--|--|
| <p><b>Plant specific genes:</b></p> <ul style="list-style-type: none"> <li>Endogenous soya</li> <li>Endogenous maize (corn)</li> <li>Endogenous rice</li> <li>Endogenous wheat</li> <li>Endogenous rapeseed</li> <li>Endogenous potato</li> <li>Endogenous cotton</li> <li>Endogenous tomato</li> </ul>                            | <p>Generally present in food, they allow the determination of the presence of specific plant DNA (soya, maize, rice, wheat, rapeseed, potato, cotton, tomato).</p> <p>A positive result, reported as “Detected (intrinsic)”, indicates that the sample contains the specific plant DNA. However it does NOT indicate whether the product contains GMO.</p> <p>A negative result, reported as “Not detected”, indicates that the sample does not contain extractable plant specific DNA. It should be noted that DNA can be degraded due to intensive processing.</p> |
| <p><b>Screening markers:</b></p> <ul style="list-style-type: none"> <li>Genetic element p-35S</li> <li>Genetic element p-FMV</li> <li>Genetic element t-NOS</li> <li>Genetic element t-E9</li> <li>Genetic element Bar</li> <li>Genetic element CP4EPSPS</li> <li>Genetic element Pat</li> <li>Genetic element Cry1Ab/c</li> </ul> | <p>Genetic elements used in GM-construct that indicate suspicion of GM-content; they are generally not found in non-GM crops. Each GM-event contains a particular and specific mix of these screening markers.</p> <p>The presence of these genetic elements, reported as “Detected”, suggests the presence of GM crops but do not identify the precise GM-crop present.</p> <p>A negative result, reported as “Not Detected”, indicates that the sample is unlikely to contain detectable GM-events.</p>  |

|  |   |
|--|---|
| <p><b>GM-maize (corn):</b></p> <p>GM maize (corn) T25<br/> GM maize (corn) MON810<br/> GM maize (corn) Bt11<br/> GM maize (corn) MON863<br/> GM maize (corn) NK603<br/> GM maize (corn) GA21<br/> GM maize (corn) TC1507<br/> GM maize (corn) DAS59122<br/> GM maize (corn) MIR604<br/> GM maize (corn) MON88017<br/> GM maize (corn) MON89034<br/> GM maize (corn) DP-98140<br/> GM maize (corn) MIR162<br/> GM maize (corn) SYN3272<br/> GM maize (corn) Bt176<br/> GM maize (corn) CBH351</p> | <p>GM-maize are insect resistant (Bt11, MON810, MON863, TC1507, MON88017, MON89034, DAS59122, MIR604, MIR162, Bt176, CBH351), herbicide tolerant (T25, NK603, GA21, DP98140) and engineered for ethanol production (SYN3272).</p> <p>A positive result indicates that the sample contains detectable level of the specific GM-maize (&gt;LOD).</p> <p>Quantification of the specific GM-maize will NOT be performed if it is detected below the determinate threshold. The positive result will be reported as “Detected” in the analytical report with an additional comment as “Not Quantifiable”.</p> <p>Quantification of the specific GM-maize will be performed if it is detected above the determinate threshold. The positive result will be reported as “Detected” in the analytical report with an additional comment as “Quantifiable”.</p> <p>For <u>unapproved GM-maize</u>, quantification is not required, a positive result is reported as “Detected” and the food material should be rejected.</p> <p>A negative result, reported as “Not Detected”, indicates that the sample does not contain detectable GM-maize DNA.</p> |
| <p><b>GM-soya:</b></p> <p>GM soya RRS<br/> GM soya A2704-12<br/> GM soya DP-356043<br/> GM soya DP-305423<br/> GM soya MON89788<br/> GM soya MON87701<br/> GM soya BPS-CV127-9<br/> GM soya FG72<br/> GM soya A5547-127</p>  | <p>GM-soya are herbicide tolerant (RRS, A2704-12, DP-356043, MON89788, BPS-CV127-9, FG72, A5547-127), insect resistant (MON87701) and enriched in oleic fatty acid (DP-305423).</p> <p>A positive result indicates that the sample contains detectable level of the specific GM-soya (&gt;LOD).</p> <p>Quantification of the specific GM-soya will NOT be performed if it is detected below the determinate threshold. The positive result will be reported as “Detected” in the analytical report with an additional comment as “Not Quantifiable”.</p> <p>Quantification of the specific GM-soya will be performed if it is detected above the determinate threshold. The positive result will be reported as “Detected” in the analytical report with an additional comment as “Quantifiable”.</p> <p>For unapproved GM-soya, quantification is not required, a positive result is reported as “Detected” and the food material should be rejected.</p> <p>A negative result, reported as “Not Detected”, indicates that the sample does not contain detectable GM-soya DNA.</p>   |
| <p><b>GM-rice:</b></p> <p>GM rice Bt63<br/> GM rice KMD1<br/> GM rice Xa21/IR72</p>  | <p>Unapproved GM-rice are insect (Bt63, KMD1) and bacteria (Xa21/IR72) tolerant.</p> <p>A positive result indicates that the sample contains detectable level of the specific unapproved GM-rice (&gt;LOD). Quantification is not required, a positive result is reported as “Detected” and the food material should be rejected.</p> <p>A negative result, reported as “Not Detected”, indicates that the sample does not contain detectable unapproved GM-rice DNA.</p>   |
| <p><b>Plant material</b></p>   | <p>A positive result, reported as “Detected (intrinsic)”, indicates the presence of plant DNA.</p>  |
| <p><b>DETECTION OF GMO IN SAMPLE</b></p>   | <p>Conclusion of overall GMO finding in the test sample. If GM-material has been detected and/or identified, it is reported as “Detected” otherwise it is reported as “Not Detected”.</p>   |