A NEW PORTABLE MONITOR

ODOROUS COMPOUNDS IN

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FOR MEASUREMENT OF
ORAL, EXHALED AND NASAL AIR

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Introduction

A compact and simple gas monitor (B/B checker®) equipped with newly invented direct gas sensor has been developed for measuring volatile compounds in oral, exhaled and nasal air.

Purpose

The purpose of this study was to assess the correlation between the measurements of the new monitor (B/B checker®) and those of organoleptic testing and ordinary gas chromatography.

Conclusion

The results suggest that the new portable monitor (B/B checker®) might be useful for the diagnosis of malodor from oral and nasal cavity.
Subjects
Twenty healthy subjects (10 females and 10 males; mean age: 41.2 ± 19.3)
Oral gas, Exhaled gas and Nasal gas were analyzed.

Measurement of samples

- The new monitor (B/B Checker®, Taiyo Inst. Inc., Japan)
The total concentration of various volatile compounds was measured.

- The gas chromatography (GC-14B, Shimazu Corp., Japan)
Volatile sulfur compounds (VSCs)
Hydrogen sulfide, methyl mercaptan, dimethyl sulfide were measured.

<table>
<thead>
<tr>
<th>Gas</th>
<th>B/B checker®</th>
<th>Hydrogen sulfide (ppb)</th>
<th>VSCs (ppb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (N=20)</td>
<td>48.5</td>
<td>12.7</td>
<td>57.9</td>
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<td></td>
<td></td>
<td></td>
<td>23.5</td>
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<td></td>
<td></td>
<td></td>
<td>65.3</td>
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<td></td>
<td></td>
<td></td>
<td>28.7</td>
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<tr>
<td>Exhaled (N=20)</td>
<td>56.0</td>
<td>10.8</td>
<td>71.6</td>
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<td></td>
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<td>22.0</td>
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<td>80.8</td>
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<td></td>
<td></td>
<td></td>
<td>24.5</td>
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<tr>
<td>Nasal (N=40)</td>
<td>35.3</td>
<td>10.7</td>
<td>38.2</td>
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<td></td>
<td></td>
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<td>15.6</td>
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<td></td>
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<td></td>
<td>16.8</td>
</tr>
</tbody>
</table>

*1 Mean ± S.D.

Relationship of gas concentration measured using gas chromatography and B/B checker

Table: Results of each parameters of oral gas, exhaled gas and nasal gas

Fig 1. Hydrogen sulfide (Oral)
Fig 2. VSCs (Oral)
Fig 3. Hydrogen sulfide (Exhaled)
Fig 4. VSCs (Exhaled)
Fig 5. Hydrogen sulfide (Nasal)
Fig 6. VSCs (Nasal)
Fig 7. Hydrogen sulfide (Oral, Exhaled, Nasal)
Fig 8. VSCs (Oral, Exhaled, Nasal)