USP14 as a Biomarker for Recurrent Endometrial Cancer

Endometrial cancer is the most common type of gynecologic cancer in the United States. Type 1, which occurs most often, is typically less aggressive and can often be cured with surgery alone. The less common Type 2 has a worse prognosis and usually requires surgery, radiation and/or chemotherapy. For unknown reasons, about 15% of early stage Type 1 endometrial cancer recurs. Currently, no biomarkers are known that can assess this risk of recurrence of endometrial cancer.

Description of the Invention

Expression of ubiquitin carboxyl-terminal hydrolase 14 (USP14) was recently found to correlate with endometrial cancer recurrence. Recent studies showed that patients with high USP14 levels were six times more likely to experience endometrial cancer recurrence than patients with low levels. Not only can USP14 levels be determined pre-operatively to help guide patients toward the most beneficial therapies, but it is a potential therapeutic target as well. Data suggests that highly proliferating cells may be more dependent on USP14 activity and that pharmacological inhibition of USP14 can reduce cell viability of endometrial cancer cells.

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<tr>
<th>Features</th>
<th>Benefits</th>
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<td>Improves the treatment of endometrial cancer patients</td>
<td>Determines risk of recurrence of endometrial cancer&lt;br&gt;USP14 inhibition could be used as cancer therapy</td>
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<td>Can guide surgical and/or therapeutic decisions</td>
<td>Low-risk patients could be spared aggressive surgery and/or lymph node dissection&lt;br&gt;High-risk patients may opt to undergo adjuvant therapy</td>
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<td>Testing is inexpensive and easy</td>
<td>USP14 levels can be determined pre-operatively via biopsy</td>
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Potential Applications

- Assess risk of recurrence of endometrial cancer
- Guide surgical and/or therapeutic decisions
- USP14 inhibition as cancer therapy