Highly Potent Analgesics for Inflammatory Pain

Current Analgesic Limitations

In the case of post-operative pain, neuropathic pain, burns, spinal injuries and diseases such as terminal cancer, morphine and other analgesics are ineffective or become ineffective, particularly upon chronic administration, in treating the pain attributed to injury or illness. Similarly, extended use of opioid drugs like morphine can lead to tolerance in patients, requiring increased dosages and continued use in order to achieve proper pain suppression. Because of these limitations, it is necessary to develop an analgesic that is able to appropriately suppress post-operative pain and pain from spinal injuries and burns without the dependence found in opioid drugs.

Novel Potent Analgesic

Researchers at the University of Minnesota have developed a revolutionary analgesic for treating post-operative pain, neuropathic pain, and pain from burns, spinal injuries and terminal cancers. This novel analgesic has been shown to be more effective at relieving inflammatory pain than leading analgesics in a mouse model, and unlike currently available opioid drugs, does not display tolerance. This analgesic has been synthesized using a series of bivalent ligands containing mu opioid receptor agonists and metabotropic glutamate receptor antagonist pharmacophores, and has been successful in a mouse bone tumor model. The drug would be delivered intrathecally to treat cancer-induced bone pain, neuropathy, postoperative pain, serious burns and other disease states that cannot be appropriately addressed using currently available opioids.

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<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Analgesic</td>
<td>Able to reduce and inhibit neuropathic pain, post-operative pain, and pain in burns, spinal injuries and inflammation not usually treatable with morphine or other opioids</td>
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<td>No Tolerance</td>
<td>The body does not develop tolerance to the drug, making it a viable alternative to drugs that require increased doses over periods of use</td>
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<td>Novel Painkiller</td>
<td>Synthetic analgesic is more potent and effective than other opioid analgesics due to simultaneous activation of opioid pathways and blockage of hyperalgesia caused by metabotropic glutamate-5 receptor signaling</td>
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Technology Status
In vivo mouse model experiments under way

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