Exhibit 99.1

FOR IMMEDIATE RELEASE

Anchiano Therapeutics Enters into An Exclusive Option To License Agreement for Novel Pan-RAS Inhibitor and PDE10/β-catenin Inhibitor Programs

Anchiano will make an upfront payment in exchange for the option to in-license at any time through obtaining an Investigational New Drug (IND) designation

Company also provides update on accrual to its ongoing pivotal Phase 2 Codex trial

Anchiano to hold a call on Tuesday, September 24, 2019 at 8:00 am Eastern Time

CAMBRIDGE, Mass., September 23, 2019 – Anchiano Therapeutics Ltd. (Nasdaq: ANCN) ("Anchiano" or the "Company"), a pivotal-stage biopharmaceutical company focused on the discovery and development of targeted therapies to treat cancer, today reported that Anchiano Therapeutics, Inc., the Company's U.S. subsidiary, has entered into an exclusive worldwide collaboration and option to license agreement with ADT Pharmaceuticals, LLC ("ADT") to develop novel small-molecule inhibitors of RAS and PDE10/β-catenin. This collaboration reflects Anchiano's ongoing strategy to grow a pipeline beyond its pivotal-stage asset, inodiftagene vixteplasmid, with programs that have the potential to address significant clinical needs, while leveraging Anchiano's expertise in small-molecule oncology development.

"We are excited to bring both of these important programs aimed at difficult-to-treat genetically-defined cancers into our portfolio. They complement our pivotal program and Codex trial and underscore our commitment to develop therapies with targeted approaches," said Frank Haluska M.D., Ph.D., President and Chief Executive Officer of Anchiano. "Mutations in RAS are found in approximately one-third of all cancers. Recent exciting advances have been made in treating a subset of these cancers, but the successful development of a RAS-targeted therapy with broad inhibitory activity, irrespective of RAS isoform or mutation, has the potential for great clinical impact. Likewise, APC or β-catenin alterations are found almost uniformly in colorectal cancer and polyposis syndromes, and are observed in other tumor types as well, but effective targeted approaches to these lesions have been lacking. We are enthusiastic about the opportunity to develop PDE10 inhibition to target the Wnt/APC/β-catenin pathway where it is an oncogenic driver."

Michael Boyd M.D., Ph.D., President and Chief Executive Officer of ADT, added, "We are thrilled to partner with Anchiano, a company with a well-respected management team with a track record of success in development of targeted cancer therapies in their prior experience. We have confidence that this team has the knowledge, capability, and commitment to fully develop these two programs, and a shared vision of bringing new therapies to patients in need."

Under the terms of the collaboration and license agreement, Anchiano will be granted an exclusive option to license the RAS and PDE10/β-catenin inhibitors in exchange for a $3 million upfront payment to ADT and will fund certain research activities. At any time through obtaining an Investigational New Drug (IND) designation, Anchiano will have the option to exclusively license the compounds worldwide and will be responsible for all aspects of pre-clinical and clinical development and global commercialization. If Anchiano exercises its option, it will be responsible for development and commercialization and will incur additional payment obligations, including milestone and royalty payments to ADT.

LifeSci Advisors, LLC acted as exclusive transaction advisor to Anchiano.

Dr. Haluska added, “In addition to the news of our option to license agreement, we are also providing an enrollment update on our pivotal Phase 2 Codex trial of inodiftagene vixteplasmid in BCG-unresponsive non-muscle invasive bladder cancer patients. We currently have 31 patients enrolled or in active screening, of which 23 have been dosed. We had previously estimated that enrollment for the 35-patient interim analysis would be complete by the end of September, allowing for the 12-week readout to take place in the fourth quarter of this year. While at this time we are close to that projection, our conservative estimate is that data collection and interim analysis will be completed by the first quarter of 2020.”

About the Pan-RAS Program[123]

Oncogenic mutations in the RAS family of genes (KRAS, HRAS, and NRAS) are present in approximately 30% of cancer. RAS plays a pivotal role in signal transduction pathways leading to tumor cell proliferation and survival. ADT’s program has identified novel small molecules that exhibit potent and selective inhibition of activated RAS signaling regardless of isoform or mutation, or pan-RAS inhibition.

Historically, direct inhibition of RAS has been challenging. However, investigational compounds that selectively target the KRAS G12C mutation recently have shown antitumor activity in the clinic, clinically validating RAS as a therapeutic target. These current investigational drugs are mutation specific—with G12C representing approximately 11% of KRAS mutations in cancer. A broadly active pan-RAS inhibitor with the potential to treat RAS-driven cancers regardless of RAS isoform or mutation would be clinically useful.

The RAS inhibitor program is comprised of a novel series of indene derivatives that potently, selectively and reversibly inhibit growth of tumor cells harboring mutant RAS, while having greater than 100-fold selectivity over cells with normal RAS activity. Inhibitory activity has been observed with low nanomolar potency in KRAS-, HRAS-, and NRAS-driven tumor cell models with a variety of mutations across a variety of tumor types. These compounds inhibit downstream signaling through RAF and PI3K pathways, initiate cell-cycle arrest and induce apoptosis, demonstrated blockade of GTP loading of RAS in the nucleotide-free state in cell-free biochemical assays, and have exhibited in vivo activity in RAS mutant tumor models. They have potential for RAS inhibition in a broad variety of clinical settings.

About the PDE10/β-catenin Program[45678]

Genetic alterations in components that make up the Wnt signaling pathway, which includes APC (adenomatous polyposis coli) and β-catenin, are prevalent in a number of cancer types, occurring in upwards of 80% of colorectal cancers. Additionally, germline mutations of APC lead to the hereditary cancer syndrome Familial Adenomatous Polyposis (FAP). Wnt signaling controls the level of intracellular activated β-catenin, a key effector of oncogenic signal transduction, and oncogenic alterations in Wnt, APC, or β-catenin all result in elevated and uncontrolled levels of β-catenin. Recent studies have shown that the cyclic nucleotide phosphodiesterase 10A (PDE10) is overexpressed during early stages of tumorigenesis and is essential for tumor cell growth. PDE10 inhibition activates protein kinase G and leads to the degradation of the oncogenic pool of β-catenin to suppress critical proteins essential for tumor cell proliferation and survival. Thus, targeting PDE10 provides a novel approach to selectively suppress β-catenin-mediated transcriptional activity.

ADT’s program has identified small molecules that selectively and potently inhibit PDE10 and suppress Wnt/β-catenin signaling in preclinical models. PDE10 inhibition has been shown to downregulate β-catenin expression, and inhibits polyp and tumor growth. It has potential for application in the treatment of cancer as well as spontaneous and familial polyposis syndromes.

Conference Call and Webcast Information

Company management will discuss the licensing agreement and corporate update on a call scheduled for Tuesday, September 24, 2019 at 8:00 am Eastern Time. To participate in the call, dial 1-877-451-6152 (domestic) or 1-201-389-0879 (international) fifteen minutes before the conference call begins and reference the conference passcode 13694843. The live conference call and replay can be accessed via audio webcast at http://public.viavid.com/index.php?id=136227.

About Anchiano

Anchiano is a pivotal-stage biopharmaceutical company dedicated to the discovery, development, and commercialization of novel targeted therapies to treat cancer in areas of significant clinical need, with offices in Cambridge, MA, and Jerusalem, Israel. Anchiano's most advanced product candidate, inodiftagene vixteplasmid, is in development as a treatment for non-muscle-invasive bladder cancer. For more information on Anchiano, please visit www.anchiano.com.

About ADT

ADT Pharmaceuticals is a private company focused on discovering, developing and securing patent protection for novel molecules that inhibit constitutively activated RAS- or Wnt-mediated signaling pathways that drive the growth of many human cancers. ADT's technology currently comprises a broad, novel proprietary small-molecule class, encompassing at least two distinct mechanistic sub-classes that share a common chemical core; one subclass targets RAS and the other subclass inhibits PDE10 to activate cGMP/PKG signaling and induce degradation of the oncogenic pool of β-catenin. For more information on ADT, please visit www.ADT-Pharma.com.

Forward-Looking Statements

This press release contains "forward-looking statements" that are subject to risks and uncertainties. Words such as "believes," "intends," "expects," "projects," "anticipates" and "future" or similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to the inherent uncertainties in predicting future results and conditions, many of which are beyond the control of Anchiano, including, without limitation, the risk factors and other matters set forth in its filings with the Securities and Exchange Commission, including its Annual Report on Form 20-F for the year ended December 31, 2018. Anchiano undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law.

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